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TABLE EXPLICATIVE DES PLANCHES

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TABLE EXPLICATIVE DES PLANCHES

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Pl. 76. — Fig. 1, gr. 1440. — Fig. 2, 3, gr. 1100 : Constitution du sarcolemme et des plaques motrices terminales des muscles intercostaux du lapin.

Pl. 77. — Fig. 1 à 4, gr. 1100. — Fig. 5, gr. 1440 : Même légende que la Pl. 76.

Pl. 78. — Fig. 1, gr. 500 : Dissociation des fibrilles élémentaires des fibres musculaires de la carpe. — Fig. 2, gr. 245 : *Idem*, muscles de la tortue. — Fig. 3, gr. 245 : *Idem*, muscles du mouton. — Fig. 4, gr. 245 : Faisceau de fibres musculaires de la carpe déchiré montrant la striation propre du sarcolemme.

Pl. 79. — Fig. 1 à 5, gr. 1100. — Fig. 6, gr. 610 : Constitution des fibrilles élémentaires des fibres musculaires de la couleuvre.

Pl. 80. — Fig. 1, gr. 245. — Fig. 2, 5, 6, 7, gr. 610. — Fig. 3, 4, gr. 1100 : Constitution des fibres musculaires de la couleuvre.

Pl. 81. — Fig. 1 à 4, gr. 1100 : Constitution des fibres musculaires de la couleuvre.

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Pl. 84. — Fig. 1, 4, 5, gr. 1100. — Fig. 2, 3, gr. 610. — Fig. 1, 4 : Constitution et formation des fibres musculaires du fœtus du cobaye. — Fig. 5 : Constitution des fibres musculaires du cœur du rat.

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Pl. 86. — Fig. 1, 2, 4, gr. 1100. — Fig. 3, gr. 245 : Constitution des fibres musculaires du cœur du rat.

Pl. 87. — Fig. 1, 3, 4, 6, gr. 610. — Fig. 2, 5, gr. 1100 : Constitution des fibres musculaires du cœur du rat. Sarcolemme.

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Pl. 90. — Fig. 1 à 4, gr. 245. — Fig. 1 : Epanouissement des rameaux mycéliens et formation des cellules hépatiques par leurs ramifications. — Fig. 2, 3, 4 : Groupes de cellules ou lobules hépatiques (foie du cobaye).

Pl. 91. — Fig. 1, gr. 1100. — Fig. 2, gr. 610. — Fig. 3, 4, 5, gr. 245 : Constitution des cellules hépatiques (foie du cobaye).

Pl. 92. — Gr. uniforme 1100 : Constitution des cellules hépatiques (foie du cobaye).

Pl. 93. — Fig. 1, 2, 3, gr. 100 : Constitution de la rate du mouton. Rameaux mycéliens formateurs et leur épanouissement.

Pl. 94. — Fig. 1 à 4, gr. 245 : Eléments constitutifs de la rate du mouton.

Pl. 95. — Fig. 1, gr. 33. — Fig. 2, gr. 100. — Fig. 3, gr. 245 : Constitution du testicule du cobaye. Rameaux mycéliens formateurs.

Pl. 96. — Fig. 1, gr. 100. — Fig. 2, gr. 245 : Constitution du testicule du cobaye. Constitution des rameaux mycéliens formateurs.

Pl. 97. — Fig. 1 à 5, gr. 245 : Eléments constitutifs du testicule du cobaye.

Pl. 98. — Fig. 1, 2, gr. 245. — Fig. 3, 4, gr. 610 : Eléments constitutifs du testicule du cobaye.

Pl. 99. — Fig. 1 à 4, gr. 610 : Eléments constitutifs du testicule du cobaye.

Pl. 100. — Fig. 1, 2, 3, 4, gr. 1100. — Fig. 5, 7, gr. 610. — Fig. 6, gr. 245 : Eléments constitutifs du testicule du cobaye. Formation des spermatozoïdes.

Pl. 101. — Fig. 1, gr. 245. — Fig. 2, 3, 5, 6, 7, gr. 610. — Fig. 4, 8, gr. 1100 : Constitution de l'ovaire du cobaye.

Pl. 102. — Fig. 1, gr. 100. — Fig. 2, 3, gr. 245. — Fig. 4, gr. 500 : Constitution de l'ovaire de la chienne. Photographie d'une coupe de l'ovaire.

Pl. 103. — Fig. 1, 2, 3, 5, gr. 245. — Fig. 4, gr. 610 : Formation de l'œuf dans l'ovaire de la chienne. Mode de formation des périthèces.

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Pl. 109. — Fig. 1 à 4, gr. 735 : Constitution de la rate du mouton.

Pl. 110. — Fig. 1 à 7, gr. 1100 : Eléments constitutifs de la rate du mouton.

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Pl. 112. — Fig. 1, 2,5, gr. 245. — Fig. 3, gr. 100. — Fig. 4, gr. 1440. — Fig. 6, 7, gr. 610 : Constitution des lames de l'organe électrique de la torpille.

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sure organique de l'organe électrique de la torpille en moisissure de la forme *Aspergillus*.

Pl. 114. — Fig. 1, 2, 3, 4, 9, gr. 1100. — Fig. 5, 6, 7, gr. 245. — Fig. 8, gr. 735 : Constitution de la diastase de l'orge germé. Végétation du ferment et étapes de son évolution en bouillon.

Pl. 115. — Fig. 1 à 4, gr. 1100. — Fig. 5, 7, 8, 9, gr. 245. — Fig. 6, gr. 175 : Constitution de la pepsine de porc. Végétation du ferment en bouillon et étapes de son évolution.

Pl. 116. — Fig. 4, gr. 1440, toutes les autres figures gr. 1100. — Fig. 1 : Constitution de la toxine tétanique. Zymospores. — Fig. 2 : Evolution de la toxine tétanique et sa transformation en culture bacillaire. — Fig. 3 : Constitution de la toxine diphtérique. Zymospores. — Fig. 4 à 9 : Evolution des éléments de la toxine diphtérique et étapes de leur transformation en culture bacillaire. — Fig. 10, 11 : Origine des zymospores de la toxine; éléments d'une culture diphtérique dans une solution de glucose pure.

Pl. 117. — Fig. 1, 2, gr. 245. — Fig. 3, gr. 610. — Fig. 4, gr. 1100 : Constitution des flocons qui se forment dans les solutions de fibrinogène du sang de cheval.

Pl. 118. — Fig. 1 à 7, gr. 610 : Même légende que pl. 117 (solution de fibrinogène en voie de coagulation).

Pl. 119. — Fig. 1, 2, gr. 245. — Fig. 3, 4, gr. 100 : Même légende que planche 117.

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Pl. 121. — Fig. 1, 2, 3, gr. 1440 : Désorganisation et évolution des globules sanguins de cobaye en présence de complément de lapin et du précipité des globulines d'un sérum de lapin antihématies de cobaye. — Fig. 4, gr. 1100 : Eléments du caillot du sang du cobaye écrasé entre deux lames de verre et coloré par le dahlia. — Fig. 5, 6, gr. 1100 : Eléments bactériens de la culture en bouillon des éléments contenus dans la couche des leucocytes de sang de cheval oxalaté et centrifugé.

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Pl. 125. — Fig. 1 à 6, gr. 245. — Fig. 2, 3, 4, gr. 91. — Fig. 5, gr. 1100. — Fig. 1 : Rameau mycélien du parenchyme dissocié de l'écaille du bulbe de l'oignon. — Fig. 2 à 6 : Eléments du parenchyme dissocié de la feuille du poireau.

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Pl. 127. — Fig. 1, gr. 1100. — Fig. 2, 3, gr. 610 : Eléments constitutifs de la feuille du poireau. Coupe transversale de la feuille imprégnée par le nitrate d'argent.

Pl. 128. — Fig. 1 à 4, gr. 245. — Fig. 5 à 8, gr. 610 : Eléments constitutifs de la feuille du poireau.

Pl. 129. — Fig. 1, 2, gr. 610. — Fig. 3, gr. 1100 : Eléments constitutifs de la feuille du poireau. — Fig. 1, 2 : Coupe transversale de la feuille imprégnée par le nitrate d'argent.

Pl. 130. — Fig. 1, gr. 245. — Fig. 2, gr. 91. — Fig. 1 : Coupe transversale de la feuille du poireau imprégnée par le nitrate d'argent. — Fig. 2 : Coupe transversale de l'écaille du bulbe de l'oignon (coloration par le dahlia).

Pl. 131. — Fig. 1, 2, gr. 245. — Fig. 3, 4, gr. 91. — Fig. 1 : Coupe transversale de l'écaille du bulbe de l'oignon imprégnée par le nitrate d'argent. — Fig. 2 : Coupe longitudinale de l'écaille du bulbe de l'oi-

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Pl. 134. — Fig. 1, 3, 4, gr. 610. — Fig. 2, 6, 7, 11, gr. 245. — Fig. 5, 8, 9, 10, 12, gr. 1100 : Eléments constituants du parenchyme de la carotte.

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Pl. 137. — Fig. 1, 2, 3, gr. 245 : Constitution du parenchyme de la feuille de l'*Althæa officinalis.* — Fig. 4 : *Stromatinia cydoniæ* (Fig. 1, 2, page 259, Delacroix et Maublanc, *Maladies parasitaires des plantes cultivées).*

Pl. 138. — Fig. 1 à 6, gr. 245 : Constitution de la racine et des poils radicants des radicelles du blé germé.

Pl. 139. — Fig. 1 à 8, gr. 245 : Constitution du parenchyme du pied des champignons hyménomycètes. *Collybia velutipes.*

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Pl. 141. — Principales formes gonidiennes stables des moisissures. — Fig. 1 : Forme *Penicilium.* — Fig. 2 : Forme *Citromyces.* — Fig. 3 : Forme *Aspergillus.* — Fig. 4 : Forme *Sterigmatocystis.* — Fig. 5 : Forme *Mucor corymbifer.* — Fig. 6 : Forme *Sporothricum.* — Fig. 7 : Forme *Verticilium.* — Fig. 8 : Forme *Fusarium.* — Fig. 9 : Forme *Fusophragmium.* — Fig. 10 : Forme *Alternaria.* — Fig. 11 : Forme *Fusophragmium* de l'*Achorion Gypseum.* — Fig. 12 : Forme *Monostérigmate.* — Fig. 13 : Forme *Monostérigmate* évoluée. — Fig. 14 : Forme *Passalora.* — Fig. 15 : Forme *Peronospora* ou *Botrytis cinerea (Bremia lactucae).* — Fig. 16 : Forme *Cladosporium* ou *Monilia.* — Fig. 17 : Forme *Acremonium alternatum.* — Fig. 18 : Forme *Spicaria.*

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Pl. 143. — Fig. 1, 2, 3, gr. 245 : *Fusarium solani.* — Fig. 4, gr. 175 : Formation d'un périthèce (grain d'amidon) par des filaments mycéliens du *Fusarium solani.* — Fig. 5, gr. 245 : Constitution des grains d'amidon du parenchyme de la pomme de terre.

Pl. 144. — Fig. 1, 2, gr. 245 : Mode de formation des grains d'amidon (périthèces) dans le parenchyme de la pomme de terre.

Pl. 145. — Fig. 2, 9, 10, gr. 610. — Fig. 1, 3, 4, 5, 6, 7, 8, 11, 12, gr. 1100 : Transformation spontanée de la moisissure organisée du parenchyme du tubercule de la pomme de terre en culture bactérienne. — Fig. 1, 2 : Eléments bactériens de la pourriture humide spontanée des tubercules en terre. — Fig. 3, 4, 5 : Eléments bactériens de la pourriture de la pomme de terre gelée. — Fig. 6, 7 : Eléments bactériens de la pourriture de la pomme de terre chauffée une ou deux heures à 55°. — Fig. 8 : Eléments bactériens de la culture en bouillon de la pulpe du fruit sain de la pomme de terre. — Fig. 9 à 12 : Culture de *Fusarium solani* en liquéfaction et passant à l'état bactérien.

Pl. 146. — Fig. 1 à 10, gr. 245 : Formes gonidiennes de la moisissure organique de la pomme de terre développées par transformation du parenchyme sain des tubercules .— Fig. 1 à 3 : Forme *Phytophtora infestans.* — Fig. 4, 5 : Forme *Verticilium* spéciale. — Fig. 6 : Forme *Acremonium alternatum* et *Cephalosporium acremonium.* — Fig. 7 : forme *Spicaria.* —Fig. 8, 9, 10 : forme *Fusophragmium.*

Pl. 147. — Fig. 1 à 10, gr. 245. — Fig. 1 à 6 : Mycélium et gonidies de l'une des formes du *Phytophtora infestans* se développant sur la pourriture brune de la pomme de terre. — Fig. 7 à 10 : *Fusarium solani* en évolution vers une autre forme gonidienne *(Ovularia).*

Pl. 148. — Fig. 1 à 7, Fig. 9, gr. 245. — Fig. 10, gr. 610. — Fig. 1 à 5 : Evolution de la forme *Fusarium solani* vers la forme *Penicilium solani.* — Fig. 6, 7, 8 : Forme *Spicaria verticillata solani.* — Fig. 9 : Forme *Acremonium alternatum solani.*

Pl. 149. — Fig. 1 à 6, gr. 245. — Fig. 7, 8, gr. 610. — Fig. 1 à 3 : Forme du *Phytophtora infestans* passant au type *Mucor solani.* — Fig. 4, 5 : *Mucor solani.* — Fig. 6, 7, 8 : *Phytophtora infestans* obtenu par transformation de la moisissure organique normale de la pomme de terre (passage par le cobaye).

Pl. 150. — Fig. 1, 3, 4, 6, gr. 245. — Fig. 2, 5, gr. 100 : Identité du *Plasmopara viticola* (Fig. 3), et du *Botrytis cinerea* du raisin (Fig. 1, 2, 4), Fructifications voisines, dans un même champ microscopique, d'une

culture de *Botrytis cinerea*. Transformation du *Botrytis* en *Penicilium* (Fig. 6, 7).

Pl. 151. — Fig. 1 à 10, gr. 245 : Fructifications du *Bremia lactucae* et son passage à d'autres formes gonidiennes.

Pl. 152. — Fig. 1, 2, 6, gr. 245. — Fig. 3, 4, 5, gr. 135 : Téleutospores de la *Puccinia Malvacearum* et leur origine.

Pl. 153. — Fig. 1 à 8, gr. 245 : Eléments constituants du parenchyme de la feuille normale, saine, d'*Althœa officinalis*. Ramifications terminales des rameaux mycéliens des faisceaux libéro-ligneux, dans le parenchyme même, en forme de gonidiophores de *Botrytis cinerea*.

Pl. 154. — Fig. 1 à 6, gr. 245 : Formes *Sporothricum* et *Fusophragmium* obtenues par culture sur gélose, in vitro, des téleutospores de *Puccinia Malvacearum*.

Pl. 155. — Fig. 1, 3, 6 à 10, gr. 245. — Fig. 2, 4, 5, gr. 610. — Fig. 1 à 6 : Formes gonidiennes de la moisissure organique du blé, — Fig. 1 : Forme complexe *Monilia*, *Acremonium* et *Sporothricum*. — Fig. 2 : *Fusarium tritici*. — Fig. 3, 4 : Forme *Sclerospora (Peronospora)*. — Fig. 5 : Filament mycélien de la forme *Sclerospora* portant une gonidie de *Peronospora* et une gonidie biloculaire de *Fusarium*. — Fig. 6 : Filaments mycéliens de la forme *Sclerospora* formant des stylospores et sporidies identiques à celles qui se développent par germination des spores de *Tilletia tritici*. — Fig. 7 : Forme *Alternaria*. — Fig. 8, 9 : Parenchyme normal de la jeune feuille du blé. Cellules normales de la forme des urédospores et des téleutospores de *Puccinia glumarum*.

Pl. 156. — Fig. 1, gr. 245. — Fig. 2 à 10, gr. 610. — Fig. 1 : Eléments constitutifs d'un grain de blé carié (spores de *Tilletia tritici)*. — Fig. 2 à 10 : Formes gonidiennes obtenues par culture des spores de *Tilletia tritici*. — Fig. 2 à 7 : Forme *Fusophragmium*, avec gonidies à deux loges (téleutospores), stylospores, etc. — Fig. 8 à 10 : Forme *Penicilium*.

Pl. 157. — Fig. 1, 3, gr. 245. — Fig. 2, 4, gr. 610 : Eléments constitutifs du parenchyme de la jeune feuille de Maïs.

Pl. 158. — Fig. 1 à 10, gr. 245 : *Puccinia Maydis*. — Fig. 1, 2 : téleutospores des sores. — Fig. 3 à 5 : Eléments d'un uredo. — Fig. 6 à 9 : Forme *Sporothricum* contenue dans les uredos. — Fig. 10 : Spores du charbon végétant sur les feuilles.

Pl. 159. — Fig. 1, 2, 6, 7, 9, 10, 11, gr. 610. — Fig. 3, 4, 5, 8, 13, 14, 15, gr. 245. — Fig. 12, gr. 33. — Fig. 1 à 7 : Formes gonidiennes obtenues par culture des spores d'une tumeur charbonneuse du maïs. —

Fig. 12 : forme *Fusophragmium (?)*. — Fig. 4 : Forme *Sporothricum*. — Fig. 3, 5 : Forme *Cephalosporium acremonium*. — Fig. 6, 7 : Forme *Penicilium*. — Fig. 8 à 15 : Formes gonidiennes de la moisissure organique du maïs obtenues par culture du tissu sain de la tige. — Fig. 1 : Forme compliquée *Monilia, Acremonium, Sporothricum*. — Fig. 9 à 11 : Forme *Penicilium*. — Fig. 12, 13 : Forme *Mucor corymbifer*. — Fig. 14, 15 : Forme *Fusarium*.

Pl. 160. — Fig. 1 à 5, gr. 245. — Fig. 6, gr. 100. — Fig. 7 à 10, gr. 610 : Charbon de l'avoine. — Fig. 1 : Forme gonidienne *Monostérigmate* du charbon de l'avoine végétant sur les grains. — Fig. 2, 3 : La même forme *Monostérigmate* obtenue par passage des spores du charbon dans l'organisme du cobaye. — Fig. 4, 5 : Spores du charbon végétant sur les épis d'avoine. — Fig. 6 à 9 : Formes *Aspergillus fumigatus* (Fig. 6) et *Penicilium*, obtenues par passage des spores du charbon de l'avoine par l'organisme du cobaye.

Pl. 161. — Fig. 1, gr. 175. — Fig. 2 à 8, gr. 245. — Fig. 9, gr. 100. — Fig. 10 à 13, gr. 610. — Fig. 1 : Mycélium de la forme gonidienne *Monostérigmate* végétant le long des poils des glumes. — 1, Fig. 2 : Végétation de la même forme sur les glumes. — Fig. 5 : Formes *Cladosporium* ou *Monilia* et forme *Mucor* (Fig. 8, 9) obtenues par culture directe des spores du charbon sur gélose. — Fig. 3, 4 : Forme *Monostérigmate*. — Fig. 6, 7 : Forme *Penicilium* rudimentaire. — Fig. 10 à 13 : Forme *Penicilium* parfaite obtenue par culture des organes du cobaye inoculé avec les spores du charbon.

Pl. 162. — Fig. 1, 2, 4, 5, 6, gr. 245. — Fig. 3, gr. 610 : Forme *Penicilium* obtenue par transformation directe d'une culture de tuberculose humaine in vitro.

Pl. 163. — Fig. 1, 2, gr. 100. — Fig. 2, 4, gr. 245. — Fig. 5, gr. 610 : Formes *Mucor racemosus* (Fig. 1, 2, 3), et *Sterigmatocystis* (Fig. 4, 5) obtenues par transformation directe d'une culture de tuberculose humaine in vitro (Origine : Institut Pasteur).

Pl. 164. — Fig. 1 à 16, gr. 610 : Différents types de la forme *Penicilium* obtenue par transformation directe d'une culture de tuberculose humaine (Origine : Institut Pasteur).

Pl. 165. — Fig. 1 à 16, gr. 610 : Même légende que Pl. 164 (suite).

Pl. 166. — Fig. 1 à 16, gr. 610 : Différents types de la forme *Penicilium* obtenue par transformation d'une culture de tuberculose humaine (Culture Ay. — Origine, Küss).

Pl. 167. — Fig. 1 à 15, gr. 610 : Même légende que Pl. 166 (culture Lacr., Origine : Kuss).

Pl. 168. — Fig. 1, gr. 245. — Fig. 2, 3, gr. 610 : Différents types de la forme *Penicilium* obtenue par transformation directe d'une culture de tuberculose bovine (Origine : Vallée).

Pl. 169. — Fig. 1, 2, 3, gr. 245. — Fig. 4, 5, 6, gr. 100 : Formes *Aspergillus* (Fig. 1), *Monostérigmate* (Fig. 2) et *Mucor* (Fig. 3 à 6) obtenues par transformation indirecte d'une culture de tuberculose bovine (Origine : Vallée).

Pl. 170. — Fig. 1 à 22, gr. 610 : Différents types de la forme *Penicilium* obtenue par transformation directe d'une culture de tuberculose bovine (Origine : Vallée).

Pl. 171. — Fig. 1 à 14, gr. 610 : Même légende que Pl. 170 (suite) (Origine : Vallée).

Pl. 172. — Fig. 1, 2, gr. 610. — Fig. 3, 4, 5, gr. 245. — Fig. 1, 2 : Forme *Penicilium* obtenue par transformation directe d'une culture de tuberculose aviaire (Origine : Institut Pasteur). — Fig. 3, 4 : Forme *Aspergillus*. — Fig. 5 : Forme *Monostérigmate*, obtenues par transformation indirecte de la même culture (passage par le cobaye).

Pl. 173. — Fig. 3 à 7, gr. 610. — Fig. 1, 2, Fig. 8 à 16, gr. 245. : Différentes formes gonidiennes obtenues par culture du tissu pulmonaire et de la matière caséeuse des tubercules de l'homme. — Fig. 1 : *Penicilium*. — Fig. 2 à 6 : *Citromyces*. — Fig. 7, 8 : *Acaulium*. — Fig. 9, 10 : *Aspergilus minimus*. — Fig. 11, 12 : *Sterigmatocystis*. — Fig. 13, 14 : *Monostérigmatis*. — Fig. 15, 16 : *Cephalosporium acremonium* ou *Acremonium alternatum*.

Pl. 174. — Fig. 1 à 16, gr. 610 : Différents types de la forme *Penicilium* de la moisissure organique de l'homme (nouveau-né mort à terme). — Fig. 8 et 11 à 16 : Types obtenus de la pulpe du foie; les autres types de la pulpe du tissu pulmonaire.

Pl. 175. — Suite de la planche 174. Fig. 1, 5, 8, 13, 15, 19, 20 : Types obtenus de la pulpe du foie; les autres types, de la pulpe du poumon (Gr. uniforme 610).

Pl. 176. — Fig. 1 à 7, gr. 610. — Fig. 8 à 12, gr. 245 : Différentes formes gonidiennes de la moisissure organique de l'homme (nouveau-né mort à terme). Forme *Citromyces* obtenue de la pulpe cérébrale d'un nouveau-né (Fig. 1, 2), et de la pulpe du tissu pulmonaire (Fig. 3 à 7) d'une autre nouveau-né. — Fig. 8 : Forme *Sterigmatocystis* obtenue de

la pulpe du poumon. — Fig. 9, 11, 12 : Forme *Sporothricum* obtenue de la pulpe cérébrale d'un nouveau-né (Fig. 9), du tissu pulmonaire d'un deuxième nouveau-né (Fig. 11), et de la pulpe cérébrale d'un troisième (Fig. 12). — Fig. 10 : Forme *Aspergillus* peu développée obtenue de la pulpe du poumon d'un nouveau-né.

Pl. 177. — Fig. 1 à 16, gr. 610 : Différents types de la forme *Penicilium* de la moisissure organique du bœuf. — Fig. 1, 2, 3, 5, 15 : Types obtenus de la pulpe du foie, les autres types de la pulpe du poumon.

Pl. 178. — Fig. 1 à 12, gr. 610. — Fig. 13, 14, 15, 16, gr. 100. — Fig. 1 à 2 : Différents types de la forme *Penicilium* de la moisissure organique du bœuf. — Fig. 13, 14 : Forme *Mucor*. — Fig. 15, 16 : Forme *Rhizopus* de la moisissure organique du bœuf.

Pl. 179. — Fig. 1 à 6, gr. 1100 : Eléments constituants du voile (masses germinatives ou leucocytes) de deux cultures en bouillon (Fig. 1 à 3, culture n° 1 ; Fig. 4 à 6, culture n° 2) obtenues par transformation spontanée du tissu pulmonaire de deux nouveau-nés cultivé sur gélose et reporté en bouillon (culture de 20 jours).

Pl. 180. — Fig. 1 à 8, gr. 1100 : Eléments constituants du voile d'une culture sur bouillon obtenue par repiquage de la culture du tissu pulmonaire du nouveau-né sur gélose. Eléments du voile après dix heures (Fig. 1, 2, 3) et treize heures (Fig. 4, 5, 6). — Fig. 7 : Culture bactérienne d'un cancer du sein, contenant la forme bacillaire en végétation dans le tissu cancéreux même. Formation d'une masse germinative et d'un gros rameau mycélien par germination. — Fig. 8 : Transformation in vitro, en masses germinatives, de la matière caséeuse extraite d'un tubercule du poumon de l'homme. Eléments d'une culture en bouillon de trois jours, obtenue par repiquage du voile dont les éléments sont représentés Pl. 181.

Pl. 181. — Fig. 1 à 5, gr. 1100 : Eléments constituants du voile d'une culture en bouillon de quarante-cinq jours obtenue par transformation de la matière caséeuse d'un tubercule du poumon de l'homme.

Pl. 182. — Fig. 1, gr. 175. — Fig. 2, gr. 245. — Fig. 3, 4, gr. 1100. — Fig. 1 : Végétation mycélienne dans un tubercule caséeux. — Fig. 2 : Eléments du tissu pulmonaire bordant une caverne. — Fig. 3, 4 : Transformation d'un voile normal d'une culture de tuberculose humaine, par culture à 20°, en bouillon non glycériné. Eléments du nouveau voile formé et transformation de la culture en forme gonidienne *Monostérigmate*.

Pl. 183. — Fig. 1, 2, 6, 7, 8, 9, gr. 1100. — Fig. 3, 4, 5, gr. 610. —

Fig. 1 à 5 : Constitution de la matière caséeuse des tubercules du poumon de l'homme; masses germinatives et filaments mycéliens qu'elles émettent. — Fig. 9 : Germination des spores de la matière caséeuse et formation des zymospores par les filaments mycéliens qu'elles émettent. — Fig. 6, 7, 8 : Masses germinatives et leurs rameaux mycéliens dans une culture de tuberculose sur pomme de terre.

Pl. 184. — Fig. 1, gr. 650. — Fig. 2, gr. 245. — Fig. 3, gr. 610 : Eléments constitutifs du tissu cancéreux (cancer de l'utérus n° 1) (Fig. 1 : Dessin. — Fig. 2, 3 : Photographies).

Pl. 185. — Fig. 1, gr. 650 à 700 (dessin). — Fig. 2, 3, gr. 610 (Photographie) : Même légende que Pl. 184 (suite).

Pl. 186. — Fig. 1, gr. 245. — Fig. 2, 3, gr. 610 : Eléments constitutifs du tissu cancéreux (cancer de l'utérus n° 1).

Pl. 187. — Fig. 1, 2, 3, gr. 245. — Fig. 4, 5, 6, gr. 610. — Fig. 1 : Eléments constitutifs du tissu cancéreux (cancer de l'utérus n° 1). — Fig. 2 à 6 : Moisissure de la forme *Sterigmatocystis* obtenue par culture in vitro du tissu cancéreux (cancer de l'utérus n° 1).

Pl. 188. — Fig. 1, gr. 650 (sauf le sclérote n° 1, gr. 235).— Fig. 1 : Eléments constitutifs du tissu cancéreux (cancer de l'utérus n° 2). — Fig.2 à 6, gr. 610 : Forme *Penicilium* obtenue par culture du tissu cancéreux.

Pl. 189. — Fig. 1 à 9, gr. 610 : Moisissures obtenues par culture du tissu cancéreux (cancer de l'utérus n° 3). Fig. 1 à 3 : Forme *Sporothricum* et son évolution à la forme *Penicilium*. — Fig. 4 à 9 : forme *Penicilium*.

Pl. 190. — Fig. 1, gr. 130. — Fig. 2, gr. 650 : Eléments constitutifs du tissu cancéreux (cancer du sein n° 1).

Pl. 191. — Fig. 1, gr. 690. — Fig. 2, gr. 245. — Fig. 1 : Eléments constitutifs du tissu cancéreux (cancer du sein n° 1). — Fig. 2 : Moisissure de la forme *Sporothricum* obtenue par culture du tissu cancéreux in vitro.

Pl. 192. — Suite de la planche n° 191. — Fig. 1, 2, 4, gr. 245. — Fig. 3, gr. 610. — Fig. 1, 2, 3 : Forme *Penicilium*. — Fig. 4 : Forme *Monostérigmate* (moisissure grise) de la syphilis végétant dans le cancer du sein.

Pl. 193. — Fig. 1, gr. 655. — Fig. 2, gr. 53. — Fig. 3, 4, gr. 245. — Fig. 3, 4 : Eléments constitutifs du tissu cancéreux (cancer du sein n° 2). — Fig. 4, 5 : Moisissure de la forme *Acremonium alternatum* obtenue par culture in vitro du tissu cancéreux.

Pl. 194. — Fig. 1 (dessin), gr. approximatif 700. — Fig. 2 à 6, gr. 610. — Fig. 1 : Eléments constitutifs du tissu cancéreux (cancer du sein n° 3). — Fig. 2 à 6 : moisissure de la forme *Penicilium* obtenue par culture in vitro du tissu cancéreux.

Pl. 195. — Dessin gr. approximative 700 : Eléments constitutifs du tissu cancéreux (cancer du sein n° 4).

Pl. 196. — Suite de la planche 195 (cancer du sein n° 4). — Fig. 1, gr. 235 : Eléments du tissu cancéreux. — Fig. 2 à 7, gr. 610 : Moisissure de la forme *Penicilium* obtenue par culture in vitro du tissu cancéreux.

Pl. 197. — Fig. 1 à 4, gr. 245 : Moisissure présentant le double type *Sterigmatocystis* et *Aspergillus*, obtenue par culture de tissu cancéreux (cancer du sein n° 5).

Pl. 198. — Fig. 1, gr. 245. — Fig. 2, 3, gr. 610. — Fig. 4 à 11, gr. 610. — Fig. 1 à 3 : Forme *Penicilium* obtenue par culture in vitro du cancer du sein n° 6. — Fig. 4 à 11 : Forme *Penicilium* obtenue par culture in vitro du tissu du cancer du sein n° 7.

Pl. 199. — Fig. 1, 2, 3, 4, 7, gr. 610. — Fig. 5, 6, gr. 245. — Fig. 1, 2 : forme *Penicilium* obtenue par culture in vitro du tissu du cancer du sein n° 8. — Fig. 3, 4, 5 : Forme *Penicilium* obtenue par culture in vitro du tissu du cancer du sein n° 9. — Fig. 6 : Forme *Sporothricum* obtenue par culture in vitro du tissu cancéreux d'une tumeur récidivée de la région du larynx. — Fig. 7 : Forme *Monostérigmate* obtenue par culture in vitro du tissu du cancer du sein n° 10.

Pl. 200. — Fig. 1 à 7, gr. 1100 : Transformation des éléments normaux du tissu de la rate du nouveau-né en éléments caractéristiques du tissu cancéreux. Eléments constitutifs du voile d'une culture en bouillon de vingt-cinq jours, obtenue par report d'une culture de rate du nouveau-né sur gélose.

Pl. 201. — *Pneumonie.* — Fig. 1 à 5, gr. 245 : Eléments de la moisissure organique humaine en végétation dans un crachat de pneumonique.

Pl. 202. — Fig. 1, 2, 4, gr. 245. — Fig. 3, 5, gr. 610 : Forme *Penicilium* obtenue par culture sur gélose des crachats de pneumonique.

Pl. 203. — *Bacterium coli* (Fig. 1, gr. 630. — Fig. 2, 7, 8, gr. 610. — Fig. 3 : gr. 1130. — Fig. 4, 5, 6, gr. 245). — Fig. 1, 2 : Forme *Citromyces* des cultures bactériennes de *Bacterium coli*. — Fig. 3 : Eléments bactériens *(Bacterium coli)* formés dans la culture de *Citromyces*. — Fig. 4 à 8 : Forme *Penicilium* des cultures bactériennes de *Bacterium coli*.

Pl. 204. — *Actinomycose (Nocardia bovis)* (Fig. 1, gr. 830. — Fig. 2, gr. 245. — Fig. 3, gr. 610). Mycélium et ses fructifications constituant le voile d'une culture en bouillon. — Fig. 2, 3 : Forme *Penicilium* en culture sur gélose.

Pl. 205. — *Vibrion septique* (Fig. 1, gr. 135. — Fig. 2, gr. 830. — Fig. 3, 4, gr. 245. — Fig. 5, gr. 610). — Fig. 1, 2 : Forme *Corymbisporium* du vibrion septique. — Fig. 3, 4, 5 : Forme *Penicilium*.

Pl. 206. — *Tétanos, varicelle, fièvre typhoïde et maïs* (Fig. 1 à 5, gr. 610. — Fig. 6 à 13, gr. 1100. — Fig. 1 à 5 : Forme *Peronospora* de la moisissure tétanique. — Fig. 6 : Forme bactérienne obtenue par transformation de la toxine tétanique au contact de l'air. — Fig. 7 à 10 : Eléments des cultures bactériennes de l'agent pathogène de la varicelle (7, culture bouillon dix jours; 8, culture trois jours; 9, 10, culture dix jours). — Fig. 11, 12 : Culture bactérienne de vingt-quatre heures obtenue par transformation du parenchyme de la feuille du maïs ensemencé en bouillon. — Fig. 13 : Forme de transformation du bacille typhique cultivé en bouillon (éléments du voile, dixième jour).

Pl. 207. — *Tétanos* (Fig. 1, 2, 6, 9, gr. 610. — Fig. 3, 4, 5, 7, 8, 9, gr. 245). — Fig. 1, 2 : Forme *Corymbisporium* de la moisissure tétanique. — Fig. 3, 4 : Forme *Sterigmatocystis*. — Fig. 5 à 9 : Forme *Penicilium*.

Pl. 208. — *Tétanos* spontané de l'homme (Fig. 1, gr. 1100. — Fig. 2, 3, 9, 10, gr. 610. — Fig. 4 à 8, gr. 245). — Fig. 1 : Eléments de la moisissure tétanique en végétation dans le sang. — Fig. 2 : Moisissure obtenue par transformation d'une culture en bouillon. — Fig. 3 à 6 : Evolution du voile d'une culture en bouillon vers la forme *Aspergillus*. — Fig. 7 à 10 : Forme *Penicilium*.

Pl. 209. — *Tétanos spontané* (suite de la planche 208). Fig. 1, 2, 6, 7, gr. 245. — Fig. 3, gr. 610. — Fig. 4, 5, gr. 33). Moisissure obtenue par transformation indirecte des formes gonidiennes du tétanos. — Fig. 1, 2, 3 : Forme *Penicilium*. — Fig. 4, 5 : Forme *Mucor*. — Fig. 6, 7 : Forme *Penicilium*.

Pl. 210. — *Lèpre* (Fig. 1, gr. 245. — Fig. 2, 3, 4, gr. 610). — Fig. 1 : Végétation mycélienne constituant un léprome. — Fig. 2, 3, 4 : Forme *Penicilium* obtenue par culture in vitro du tissu d'un léprome.

Pl. 211. — *Morve* (Fig. 1, 3 à 7, gr. 610 : Forme *Penicilium* du *B. mallei*. — Fig. 2, gr. 245 : Forme *Aspergillus*.

Pl. 212. — *Diphtérie* (Fig. 1, 2, 3, 6, 7, gr. 245. — Fig. 4, 8, gr. 610. — Fig. 5, gr. 535). — Fig. 1 à 5 : Forme *Citromyces* d'une culture de bacille

diphtérique. — Fig. 6, 7, 8 : Forme *Citromyces* obtenue par culture de fausse membrane diphtérique (n° 6) sur gélose.

Pl. 213. — *Diphtérie.* — Fig. 1, 5, gr. 610. — Fig. 2, 3, 4, gr. 245 : Formes *Penicilium* (Fig. 1) et *Monostérigmate* (Fig. 2) obtenues par culture de fausse membrane (n° 8) sur gélose. — Fig. 3, 4, 5 : Forme *Penicilium* obtenue par culture de fausse membrane (n° 7) sur gélose.

Pl. 214. — *Diphtérie.* — Fig. 1, gr. 245. — Fig. 2 à 11, gr. 610. — Fig. 1, 2, 4, 6, 7, 8, Fig. 11, moitié inférieure : Forme *Penicilium* obtenue par culture de fausse membrane (n° 3) sur gélose. — Fig. 3, 5, 9, Fig. 11, moitié supérieure : Forme *Penicilium* d'une culture de diphtérie en bouillon.

Pl. 215. — *Diphtérie.* — Fig. 1 à 10, gr. 610. — Fig. 11, 12, gr. 245. Formes gonidiennes obtenues par transformation indirecte de la toxine diphtérique. — Fig. 1 à 10 : Forme *Penicilium.* — Fig. 11, 12 : Forme *Monostérigmate.*

Pl. 216. — *Forme Penicilium de la moisissure organique du blé.* — Fig. 1 à 8, gr. 610. — Fig. 9, 10, gr. 245. — Forme *Penicilium* obtenue par transformation des spores de grain de blé carié (Fig. 1 à 7), ou culture de feuilles de blé pilées (Fig. 8, 9, 10).

Pl. 217. — *Forme Penicilium de la moisissure organique du blé* (Fig. 1 à 17, gr. 610), obtenue par transformation indirecte (passage par le cobaye) des spores d'un grain de blé carié (Fig. 1, 3, 4, 5, 6, 10, 11, 14), ou de pulpe du parenchyme de jeunes feuilles de blé (Fig. 2, 7, 8, 9, 12, 13, 15, 16, 17).

Pl. 218. — *Forme Penicilium de la moisissure organique de l'orge* (Fig. 1 à 13, gr. 610) obtenue directement par culture de pulpe de jeunes feuilles d'orge pilées (Fig. 1, 3, 4, 5, 6, 8) ou indirectement par transformation des spores d'*Ustilago hordei* (passage par le cobaye, Fig. 2, 7, 9 à 13).

Pl. 219. — *Forme Penicilium de la moisissure organique du seigle* (Fig. 1 à 17, gr. 610), obtenue directement par culture de grains de seigle broyés.

Pl. 220. — Fig. 1 à 11, gr. 1100. — Fig. 1 à 6 : Eléments des cultures bactériennes de la moisissure organique du blé obtenues par culture des spores de *Tilletia tritici* (Fig. 1, 3, 5, 6) ou de pulpe de jeunes feuilles de blé (Fig. 2, 4). — Fig. 7 à 11 : Eléments d'une culture de bacille diphtérique en bouillon.

Pl. 221. — Fig. 1 à 12, gr. 1100. — Fig. 1 à 4 : Eléments des cultures

bactériennes de la moisissure organique du seigle (un, trois, quatre, dix-sept jours) (culture de grains de seigle broyés). — Fig. 5 à 10 : Eléments des cultures bactériennes de la moisissure organique de l'orge (culture de pulpe de feuilles broyées) (Fig. 9, 10, vingt-quatre heures, Fig. 5, 6, 7, deux jours. — Fig. 8, dix jours). — Fig. 11, 12 : Eléments bactériens d'une culture en bouillon de diastase de l'orge germé (un jour et quatre jours).

Pl. 222. — *Paratyphus B.* — Fig. 1 à 17, gr. 610 : Forme *Penicilium* des cultures de bacille paratyphique B, obtenue par passage par le cobaye.

Pl. 223. — *Fièvre typhoïde.* — Fig. 1, gr. 1130. — Fig. 2, gr. 1100. — Fig. 3, gr. 1160. — Fig. 4, gr. 245. — Fig. 5, 6, gr. 610. — Fig. 1 : Bacilles d'Eberth formés dans les cultures de *Citromyces.* — Fig. 2, 3 : Forme d'évolution du bacille d'Eberth sur gélose; masses germinatives, filaments mycéliens qui en émanent (cils) et zymospores qu'ils forment. — Fig. 4, 5, 6 : Forme *Citromyces* des cultures du bacille d'Eberth.

Pl. 224. — *Fièvre typhoïde.* — Fig. 1 à 15, gr. 610 : Forme *Penicilium* des cultures de bacille d'Eberth (passage par le cobaye. Eberth vérifié).

Pl. 225. — *Fièvre typhoïde.* — Fig. 1 à 12, gr. 610 : Forme *Penicilium* des cultures de bacille d'Eberth (passage par le cobaye. Eberth Lard.).

Pl. 226. — Fig. 1 à 16, gr. 610 : Forme *Penicilium* de la moisissure organique du maïs, obtenue directement par culture de pulpe du parenchyme de la tige.

Pl. 227. — *Typhus exanthématique.* — Fig. 1 à 11, gr. 610. — Fig. 12, 13, gr. 245. — Fig. 1 à 11 : Forme *Penicilium* de l'agent pathogène du typhus exanthématique. — Fig. 12, 13, Formes *Sterigmatocystis.*

Pl. 228. — *Typhus exanthématique* (suite). — Fig. 1, 2, 3, 4, 7, gr. 100. — Fig. 5, 6, gr. 610. — Fig. 8, 9, 12, 13, gr. 1100. — Fig. 1 à 7 : Forme *Mucor* de l'agent pathogène. Transformation en *Penicilium* sur les filaments du *Mucor* (Fig. 5, 6, 7). — Transformation du *Mucor* en forme *Monostérigmate* (Fig. 10, 11). — Fig. 8, 9, 12, 13 : Culture bactérienne de l'agent pathogène.

Pl. 229. — Fig. 1 à 7, gr. 610. — Fig. 8, 9, 10, gr. 1100 : Forme *Penicilium* de la moisissure organique de l'avoine (Fig. 1 à 7), obtenue par voie indirecte (inoculation de spores d'*Ustilago aveni* au cobaye). Eléments de la culture bactérienne de la moisissure organique de l'avoine : Fig. 8 : Culture de grains broyés en bouillon ; Fig. 9, 10 : Culture de pulpe de jeunes feuilles d'avoine).

Pl. 230. — *Dysenterie épidémique.* — Fig. 1 à 15, gr. 610 : Forme *Penicilium* des cultures du bacille dysentérique du type *Flexner* (Fig. 1 à 8) et du type *Shiga* (Fig. 9 à 15).

Pl. 231. — Fig. 1 à 15, gr. 610 : Forme *Penicilium* de la moisissure organique du *Brassica napus*, obtenue par culture directe de la pulpe du navet.

Pl. 232. — Fig. 1 à 11, gr. 1100. — Fig. 1 à 6 : Eléments des cultures bactériennes en bouillon de la chicorée (*Cichorium intybus)* de un jour (Fig. 1, 2, 3), deux jours (Fig. 4), quatre jours (Fig. 5), dix jours (Fig. 6). — Eléments d'une culture bactérienne du radis *(Raphanus sativus*, var. *radicula)* de deux jours (Fig. 7, 8). — Eléments d'une culture bactérienne de navet *(Brassica napus)* de deux jours (Fig. 10) et quatre jours (Fig. 9). — Eléments d'une culture bactérienne du chou *(Brassica oleracea*, var. *capitata)* de deux jours.

Pl. 233. — Fig. 1 à 13, gr. 1100 : Eléments des cultures bactériennes de la moisissure organique de la betterave rouge *(Beta vulgaris)* ensemencées avec : pulpe de betterave (Fig. 1, deux jours. — Fig. 3, six jours. — Fig. 4, 5, 6, dix jours) ; jus de betterave (Fig. 2, trois jours. — Fig. 7, 8, douze jours). — Eléments d'une culture bactérienne de poirée *(Beta vulgaris*, var. *cicla)* de vingt-quatre heures (Fig. 9, 10) et de quatre jours (Fig. 11, éléments du voile). — Eléments d'une culture bactérienne du poireau *(Aillum porrum)* de quatre jours (Fig. 12 et de douze jours (Fig. 13).

Pl. 234. — *Choléra.* — Fig. 1 à 7, gr. 610 : Forme *Penicilium* des cultures de vibrion cholérique (transformation directe, cult. choléra Pot).

Pl. 235. — *Choléra.* — Fig. 1 à 4, gr. 245. — Fig. 5 à 8, gr. 610 : Forme *Penicilium* des cultures de vibrion cholérique (vibrion de Bologne).

Pl. 236. — *Choléra.* — Fig. 1, gr. 245. — Fig. 2, gr. 100. — Fig. 3 à 9, gr. 245 : Vibrion de Bologne ; forme *Mucor* (Fig. 1, 2). — Vibrion de Jaritzin : forme *Penicilium* (Fig. 3, 4) ; forme *Sterigmatocystis* (Fig. 5) ; forme *Aspergillus* (Fig. 6 à 9).

Pl. 237. — *Charbon.* — Fig. 1, gr. 100. — Fig. 2, gr. 245. — Fig. 3, 4, 5, gr. 610 : Formes gonidiennes des cultures bactériennes de charbon. — Fig. 1, 2 : Forme *Aspergillus.* — Fig. 3, 4, 5 : Forme *Penicilium.*

Pl. 238. — *Charbon.* — Fig. 1, gr. 245. — Fig. 2, gr. 610. — Fig. 3, gr. 1100. : Forme *Penicilium* des cultures bactériennes de charbon.

Pl. 239. — *Charbon.* — Fig. 1, 2, gr. 610. — Fig. 3, gr. 1100. — Fig.

1 : Masses germinatives dans une culture de charbon en bouillon âgée de quatorze heures. — Fig. 2, 3 : Végétation en bouillon des spores de la forme *Aspergillus* des cultures de charbon.

Pl. 240. — *Peste.* — Fig. 1, 7, 8, gr. 245. — Fig. 2 à 6, gr. 610 : Forme *Penicilium* des cultures bactériennes de peste. — Fig. 4 à 9 : Transformation directe. — Fig. 1, 2, 3 : Passage par le cobaye. — Fig. 7, 8, 9 : Peste de Marseille.

Pl. 241. — *Peste.* — Fig. 1 à 7, gr. 610. — Fig. 8 à 13, gr. 1100. — Fig. 1 à 7 : Forme *Penicilium* d'une culture bactérienne de peste de Marseille. — Fig. 8 à 12 : Eléments des cultures bactériennes de la moisissure organique du rat. — Fig. 8, 9, 12 : Culture de substance cérébrale du rat en bouillon âgée de deux jours. — Fig. 10, 11 : Culture de pulpe du foie du rat en bouillon, âgée de deux jours. — Fig. 13 : Eléments d'une culture de peste de Marseille sur gélose, après son passage dans l'organisme du cobaye.

Pl. 242. — Forme *Penicilium* de la moisissure organique du rat normal (Fig. 1 à 10, gr. 610).

Pl. 243. — *Fièvre de Malte.* — Fig. 1 à 10, gr. 610 : Forme *Penicilium* des cultures bactériennes de *Micrococcus melitensis.* — Fig. 11, 12, gr. 1100 : Culture bactérienne en bouillon de la moisissure organique de l'orange.

Pl. 244. — Forme *Penicilium* de la moisissure organique de l'orange *(Citrus aurantium)* (Fig. 1 à 8, gr. 610).

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IMPRIMÉ PAR

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DE LYON

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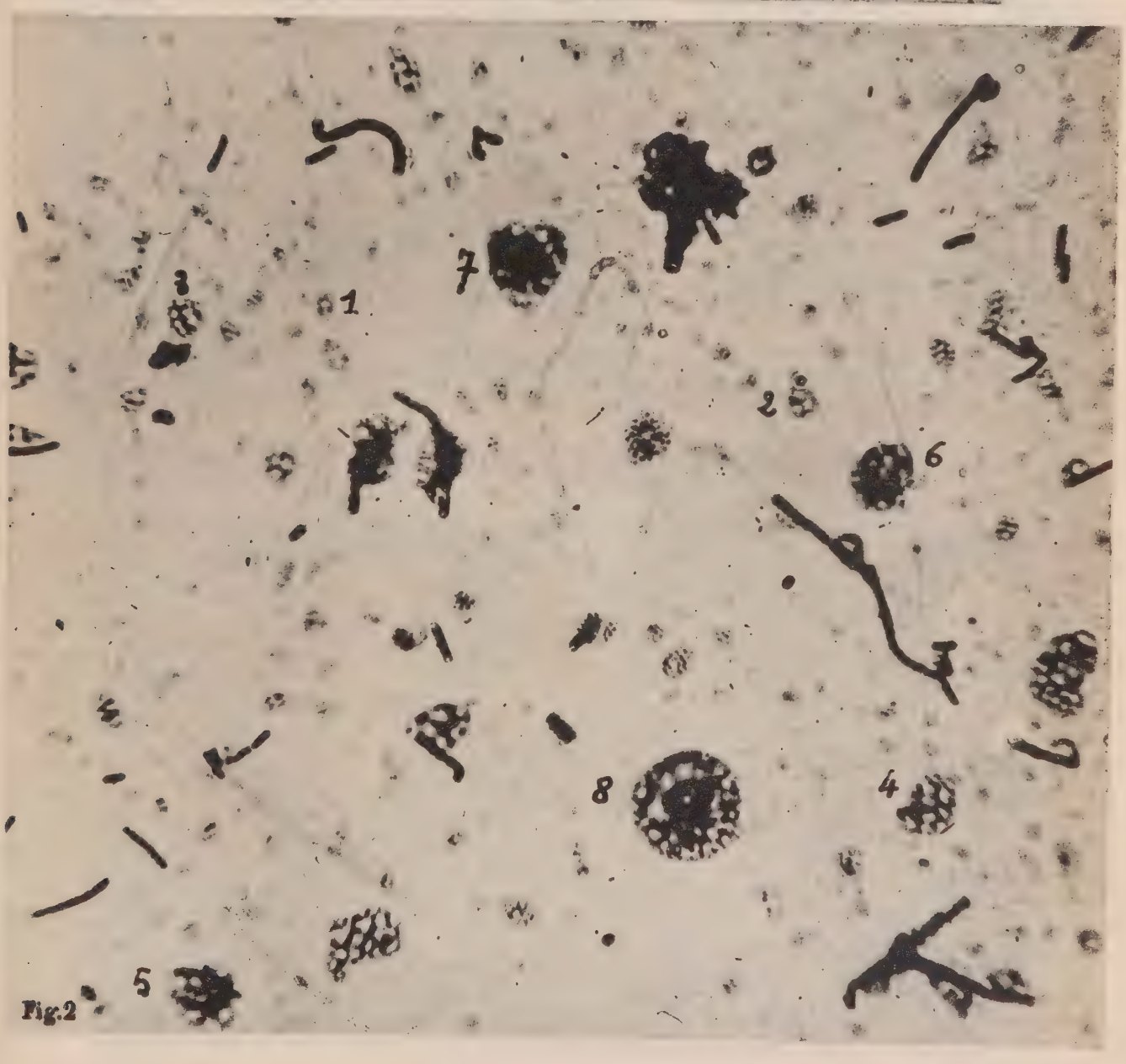

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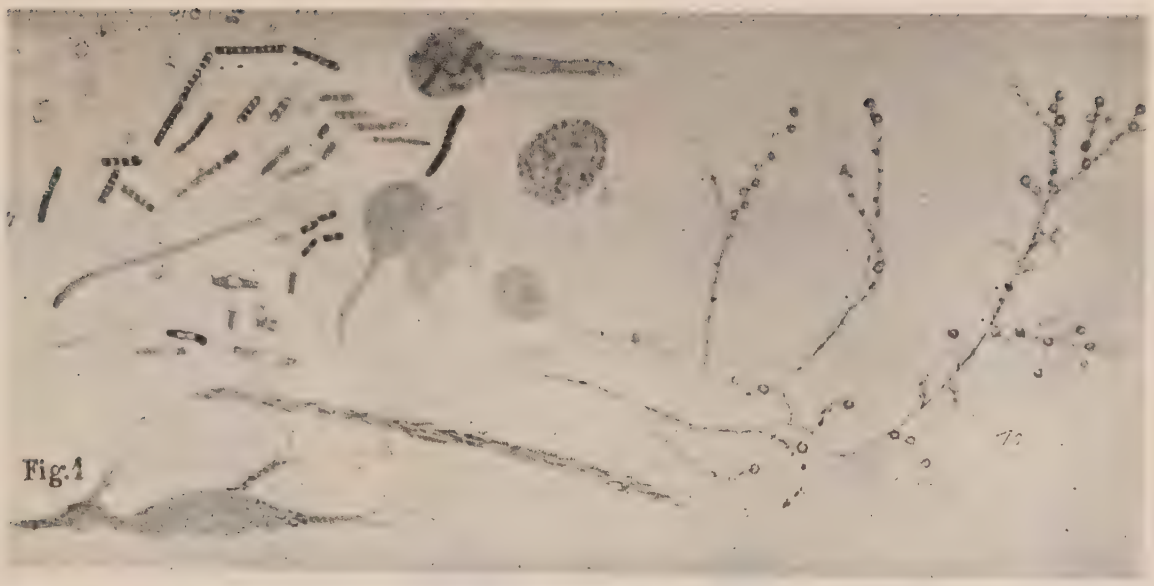

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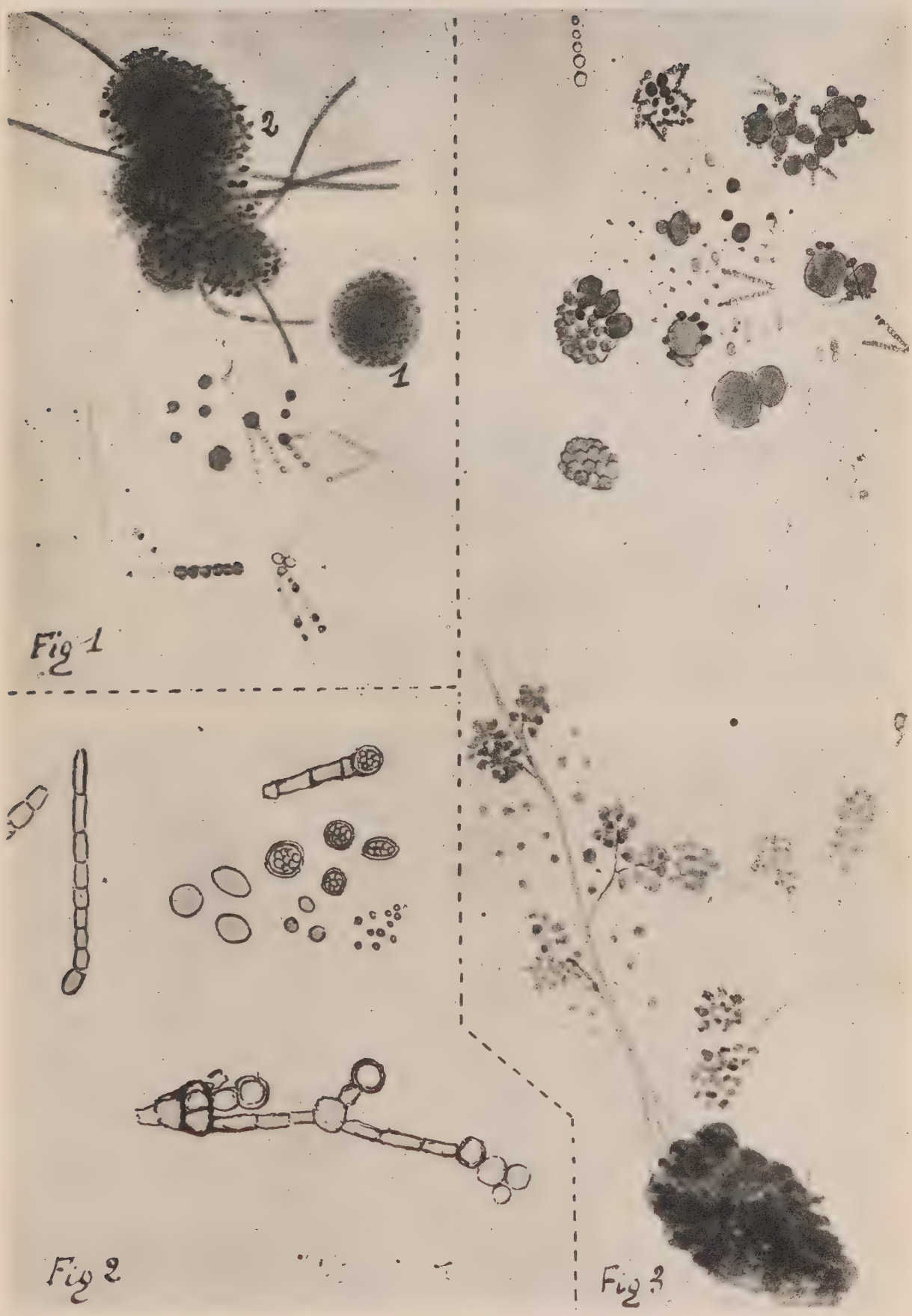

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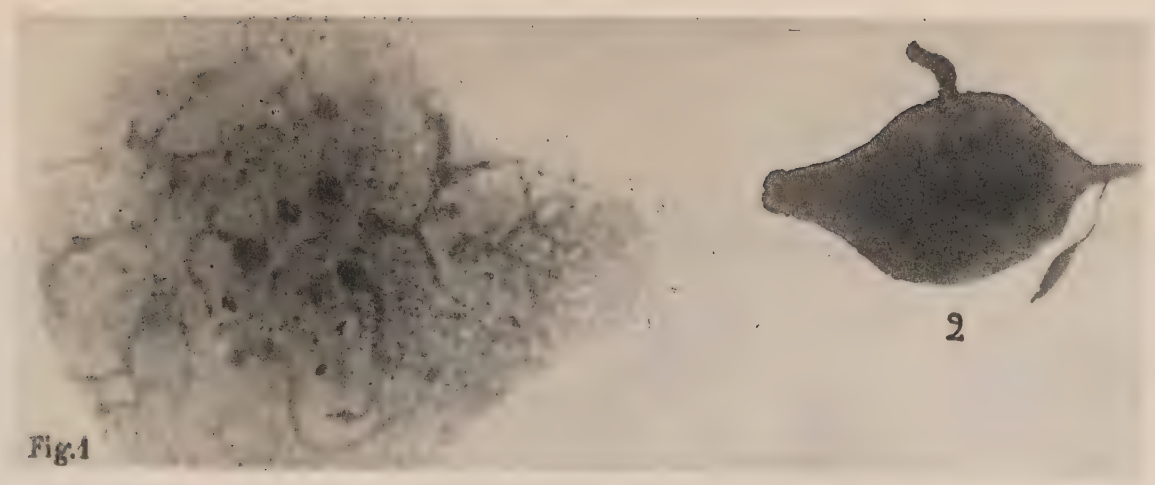

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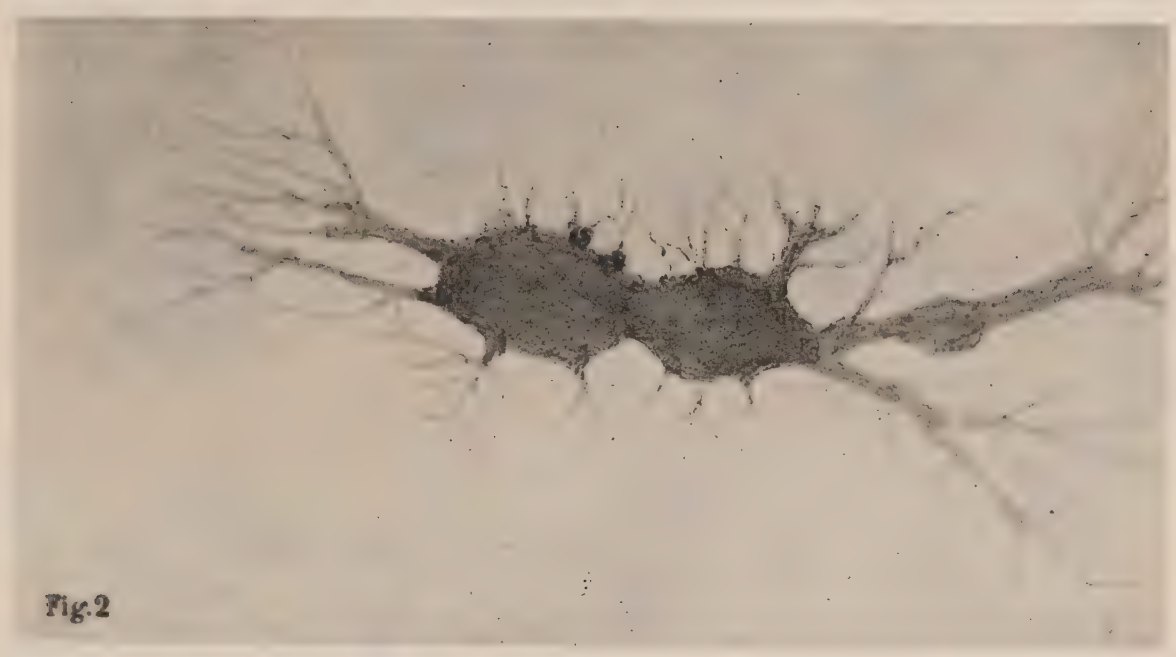

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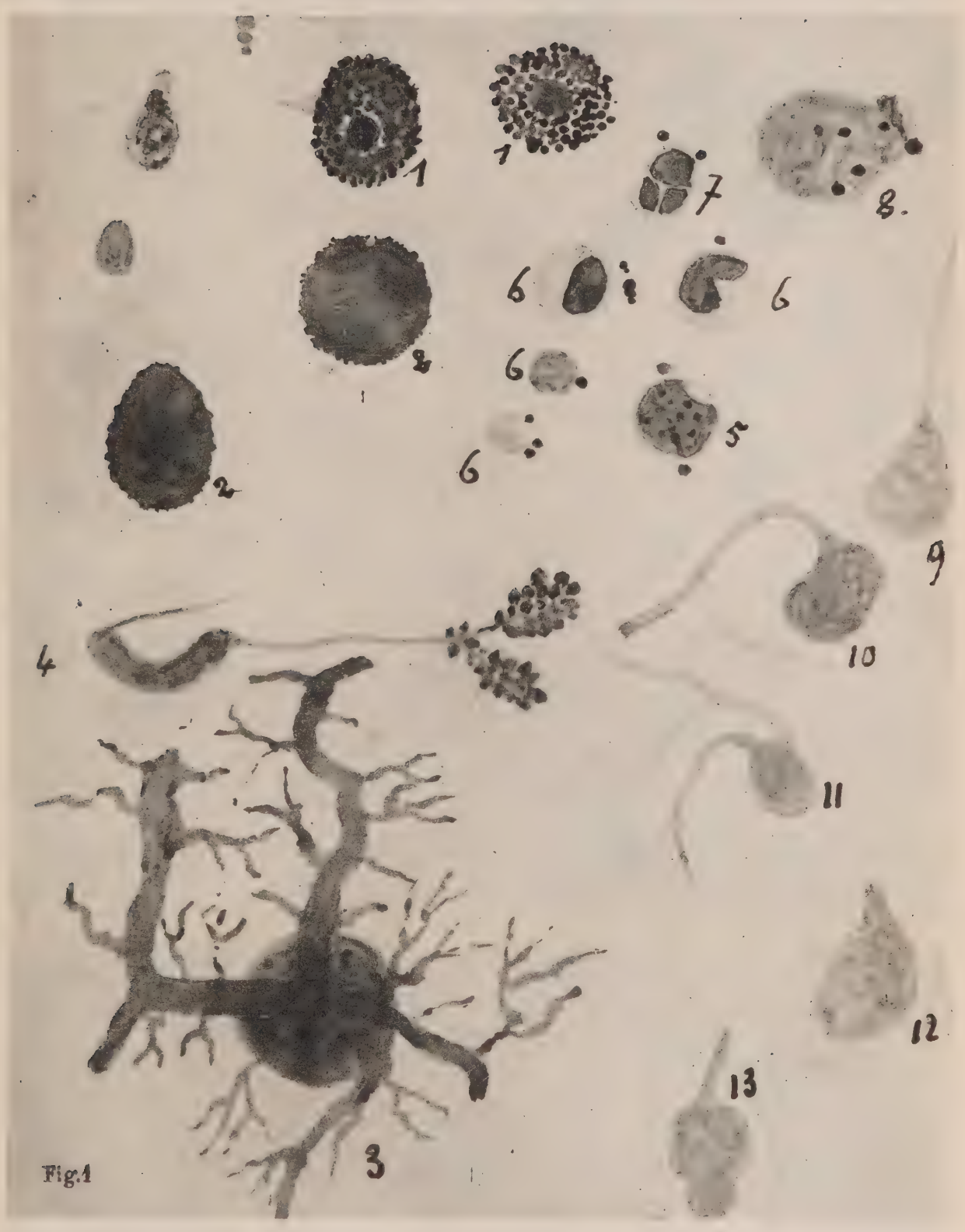

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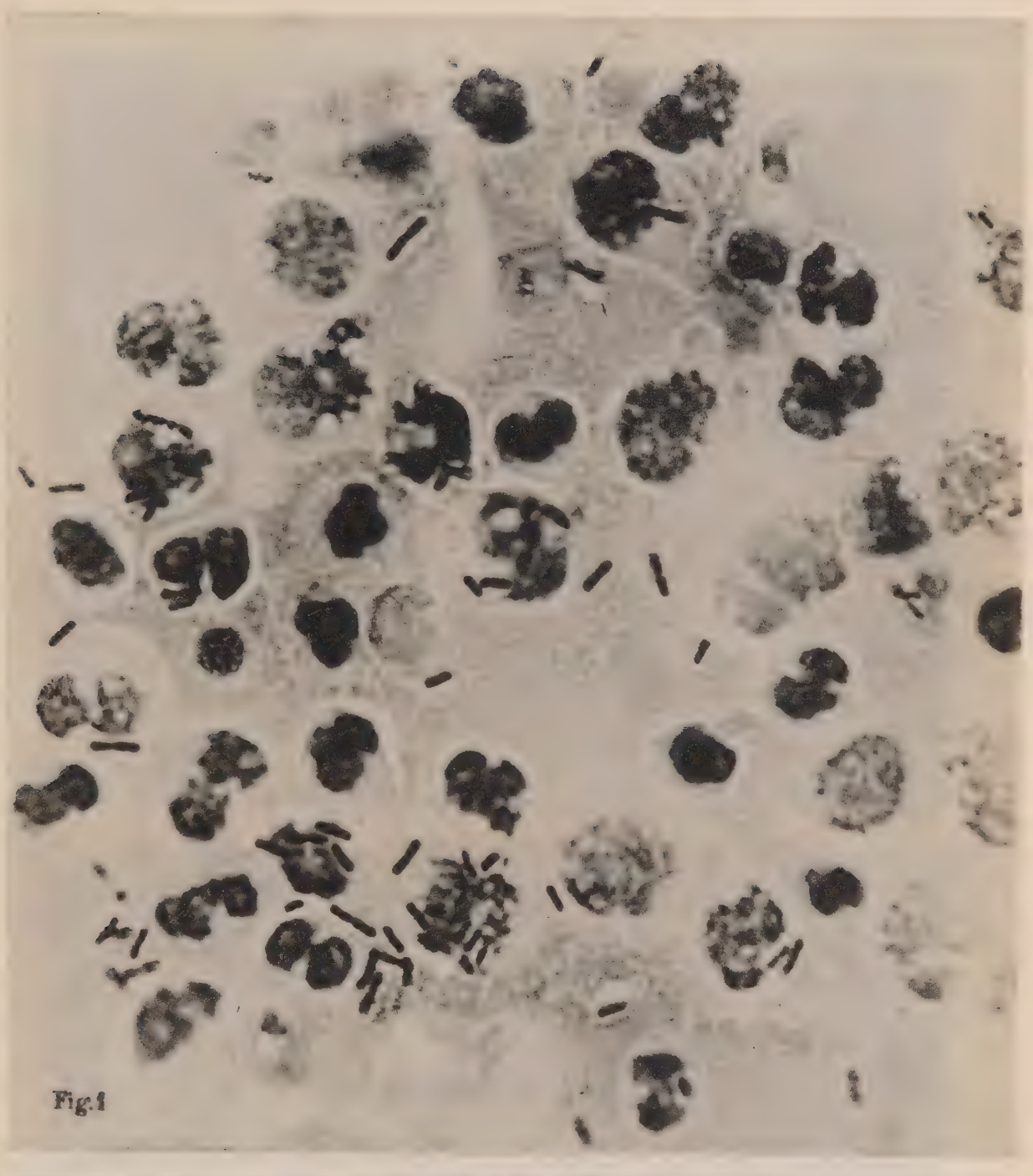

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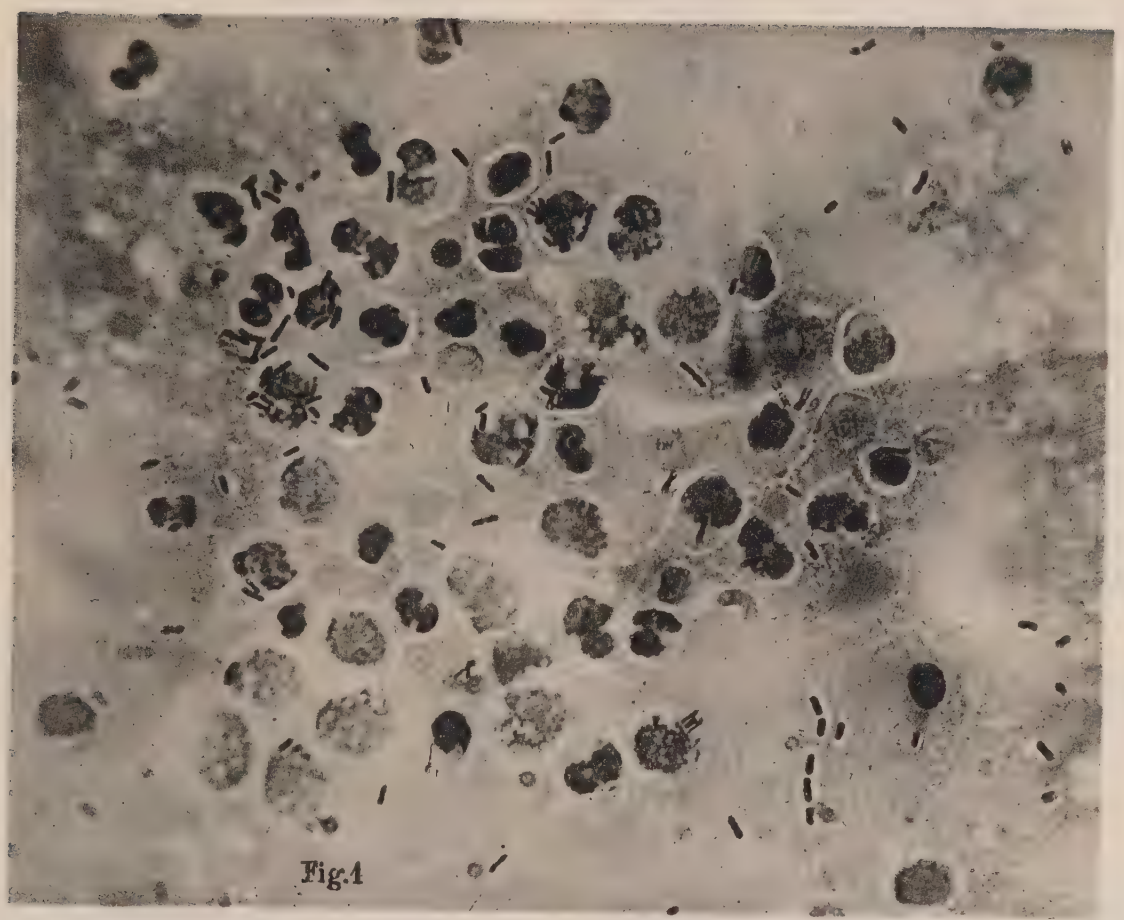

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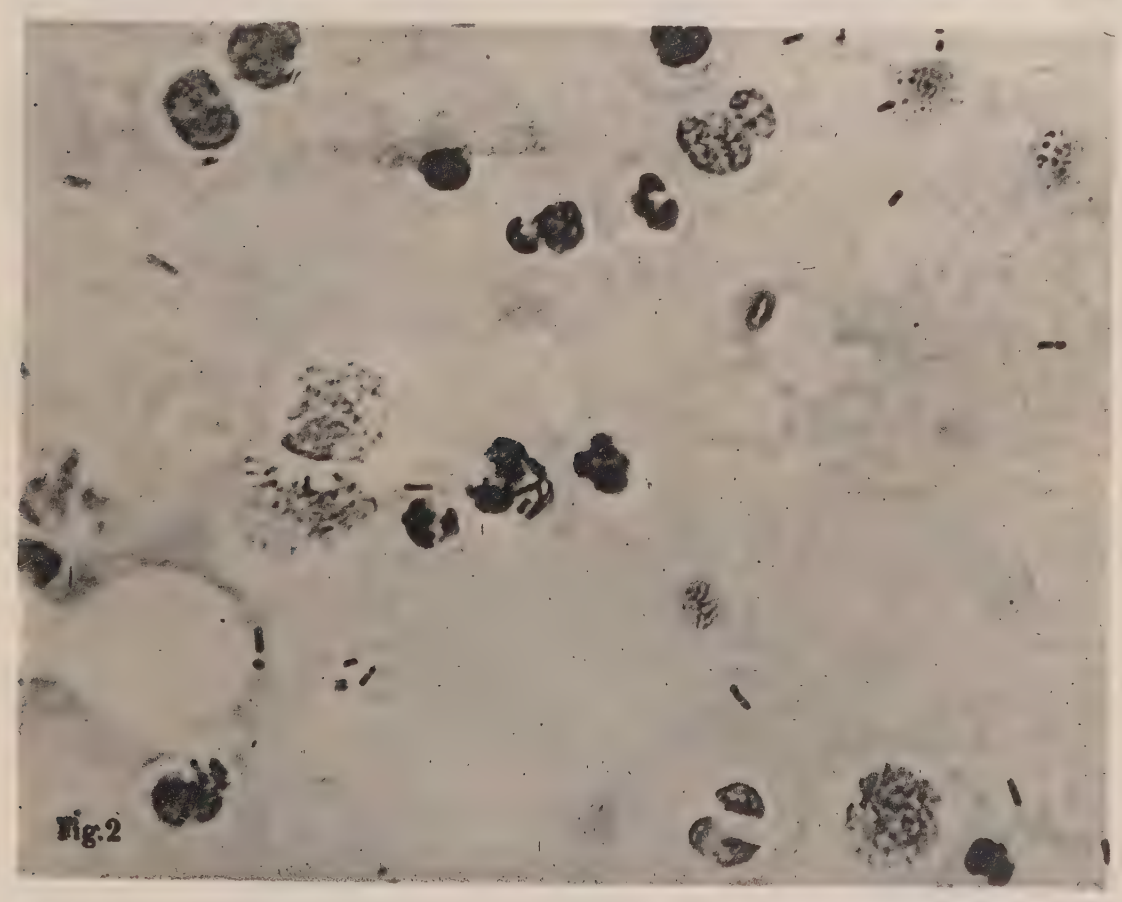

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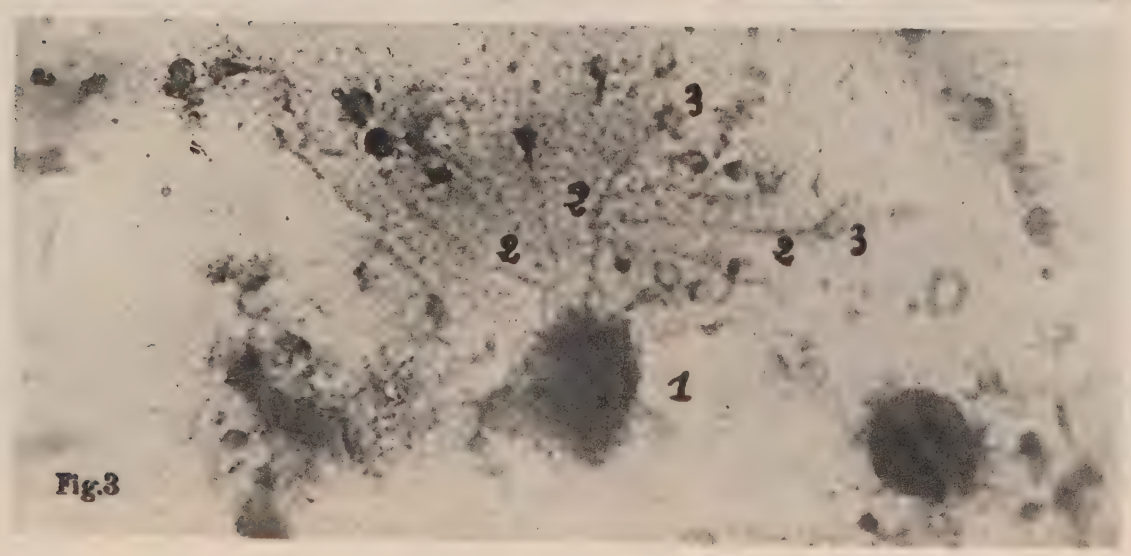

Fig.3

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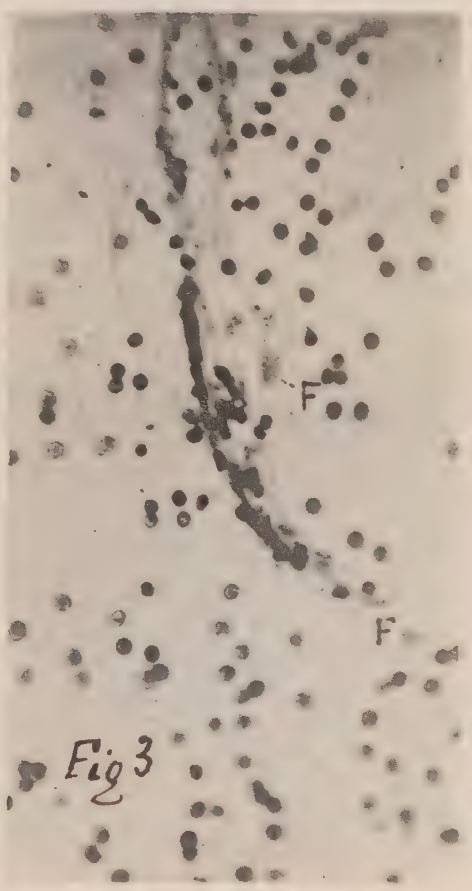
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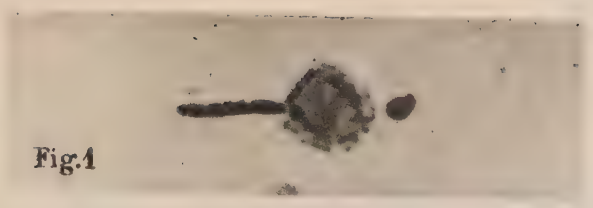

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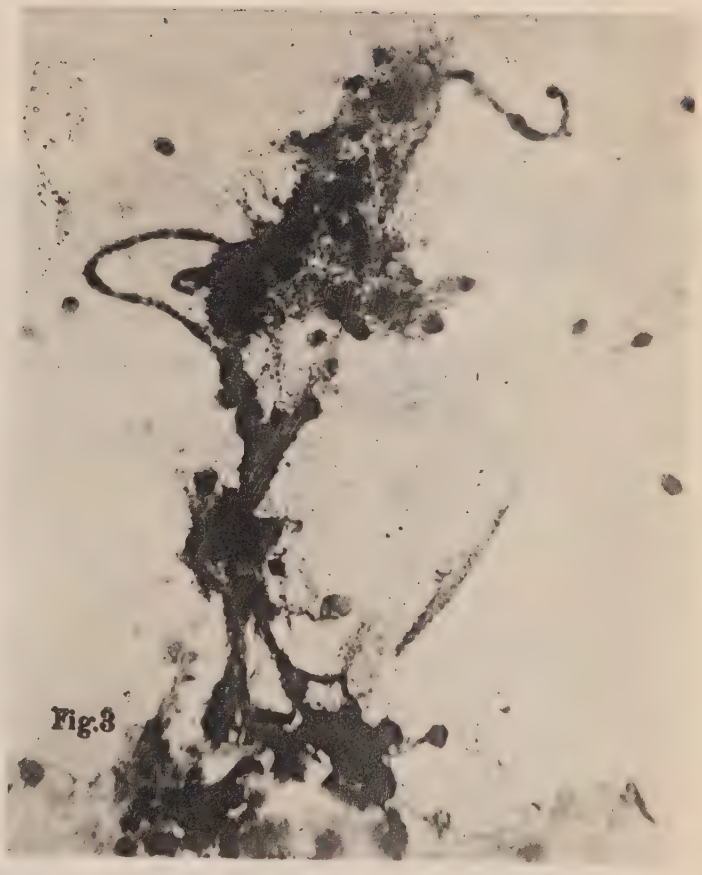

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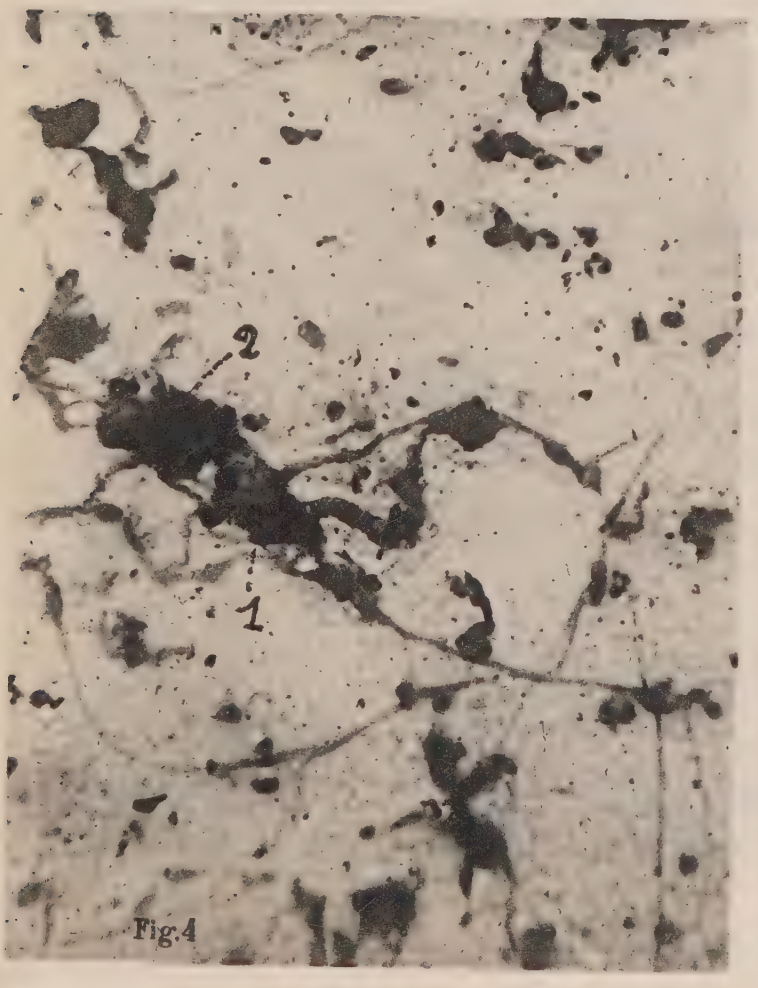

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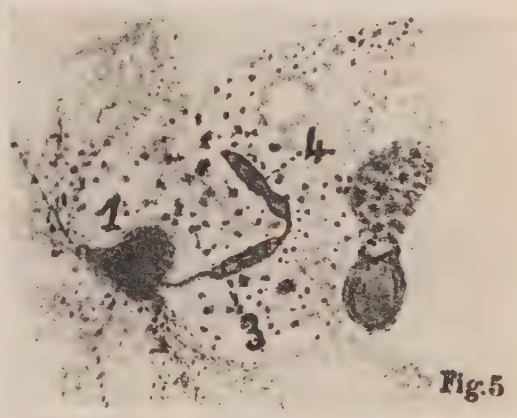

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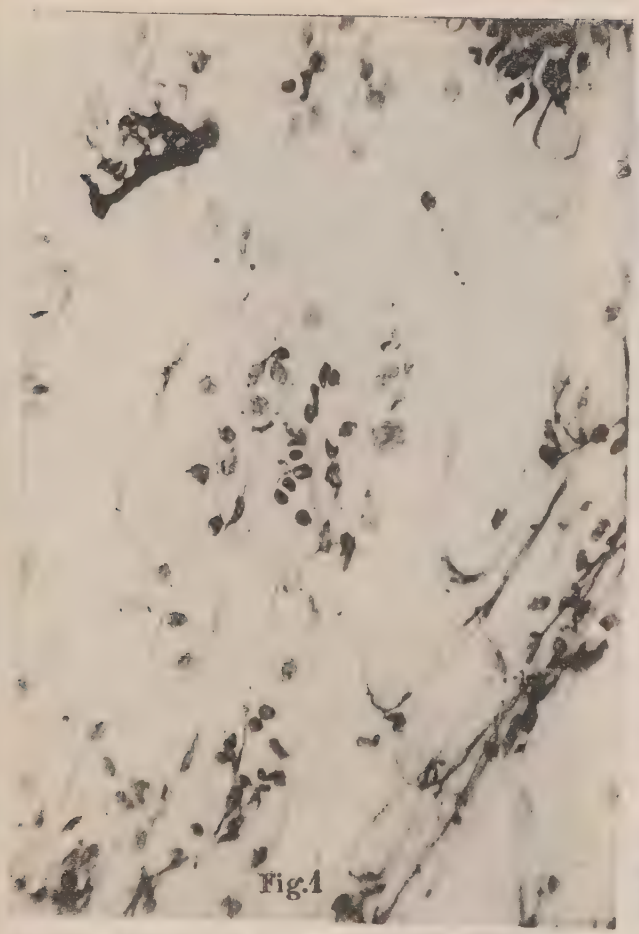

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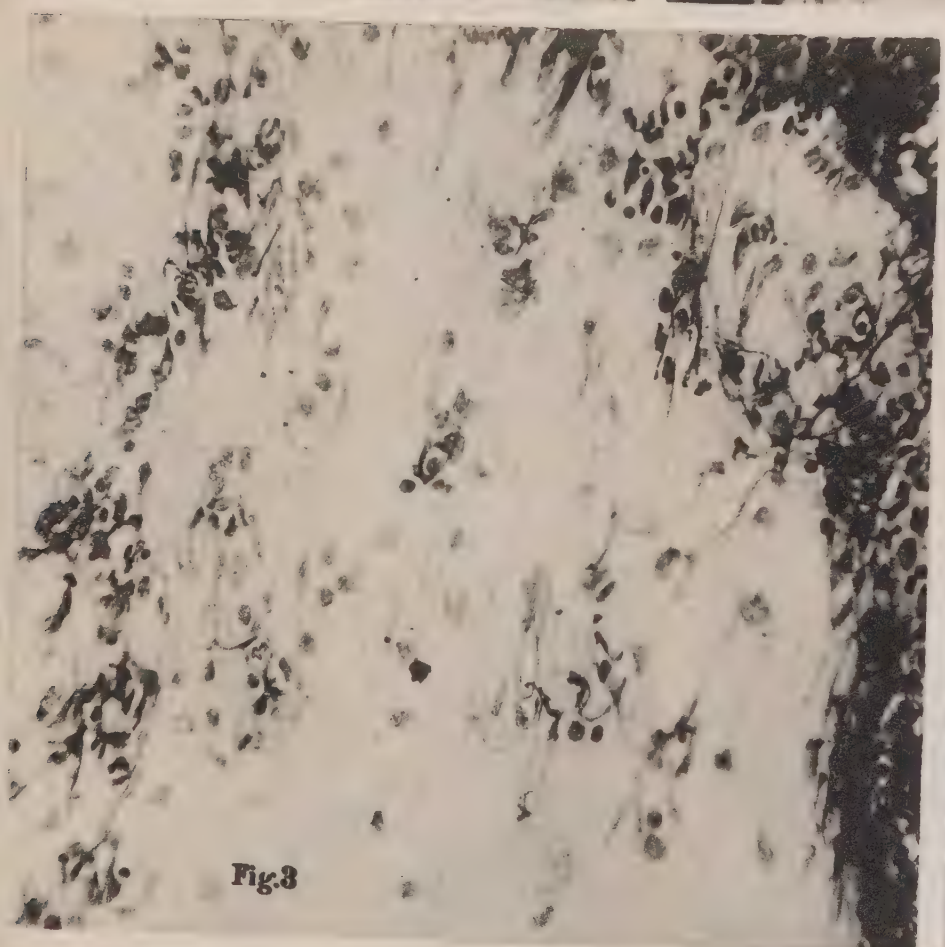

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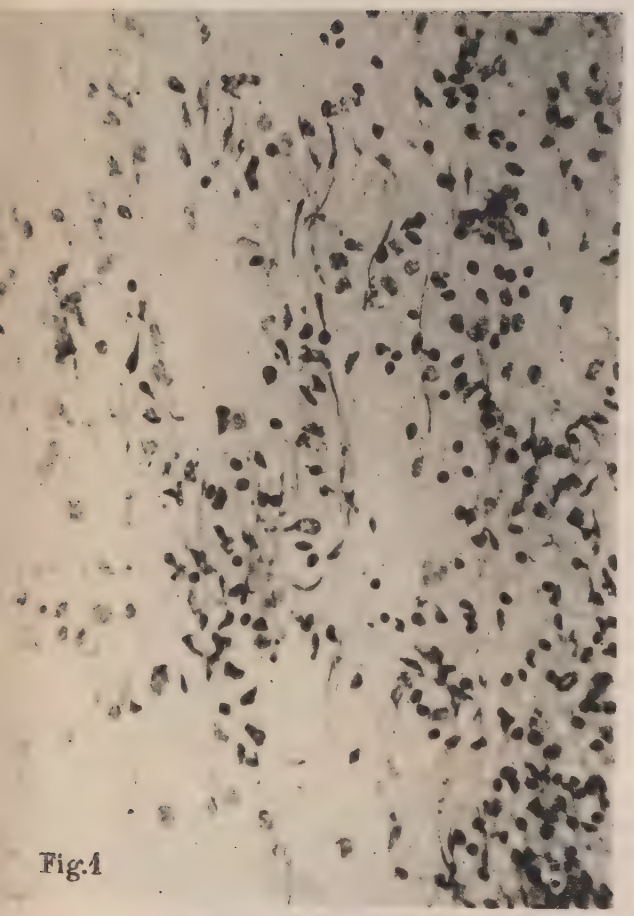

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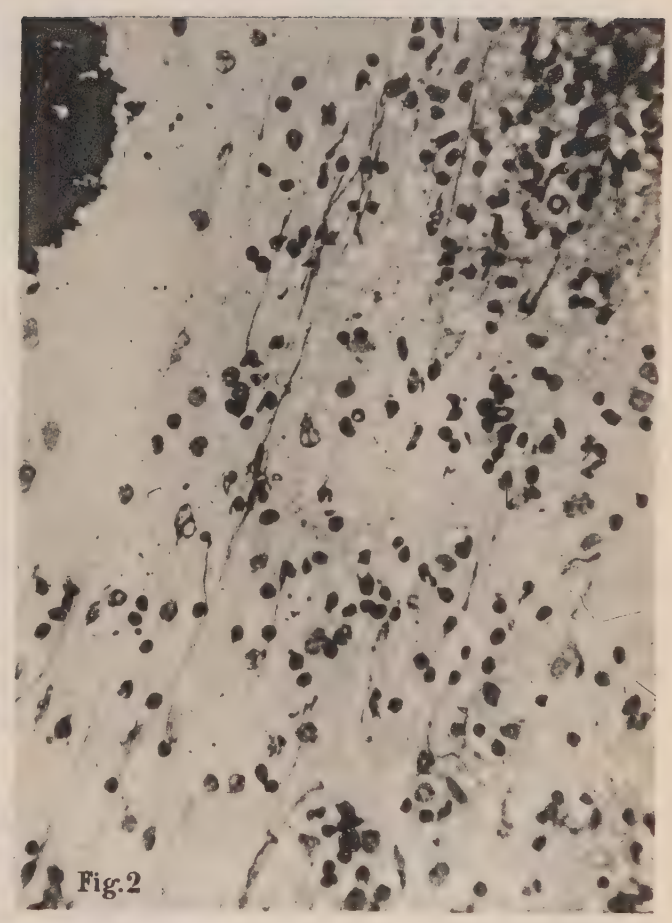

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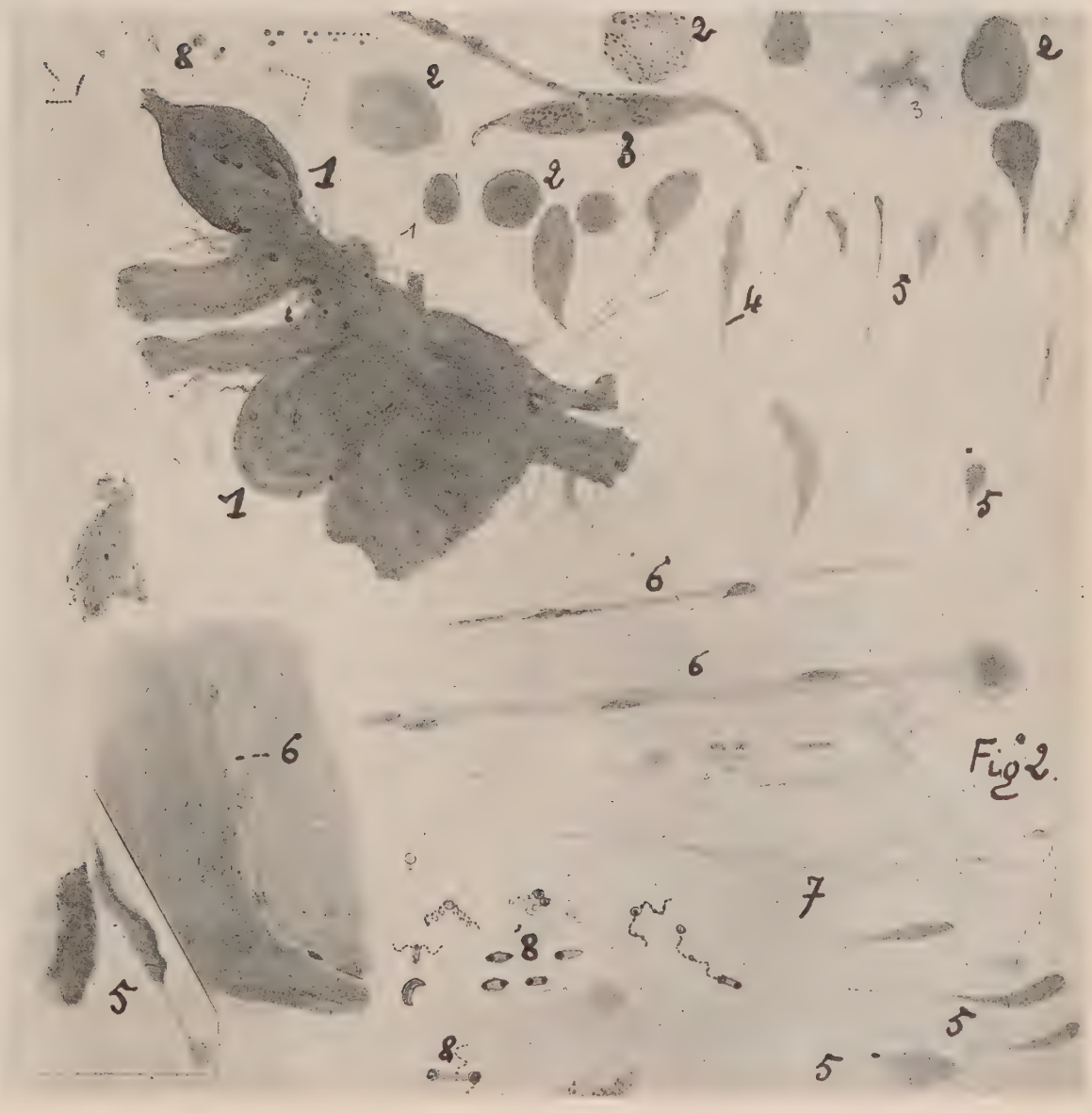

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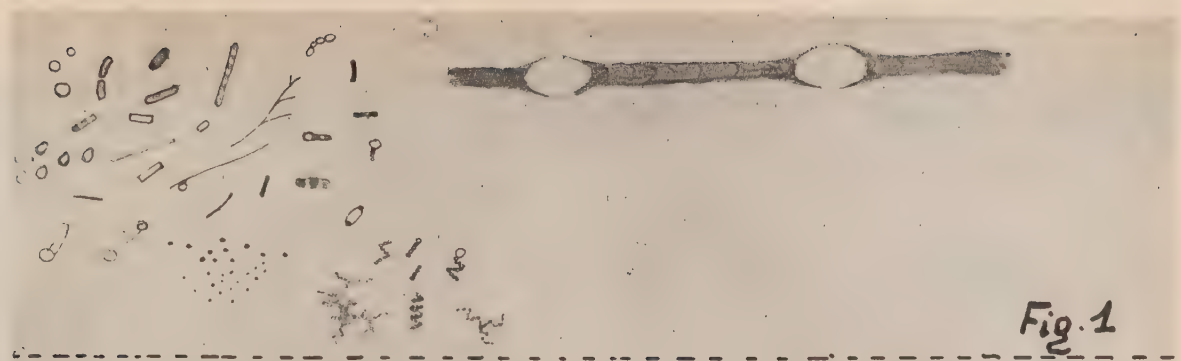

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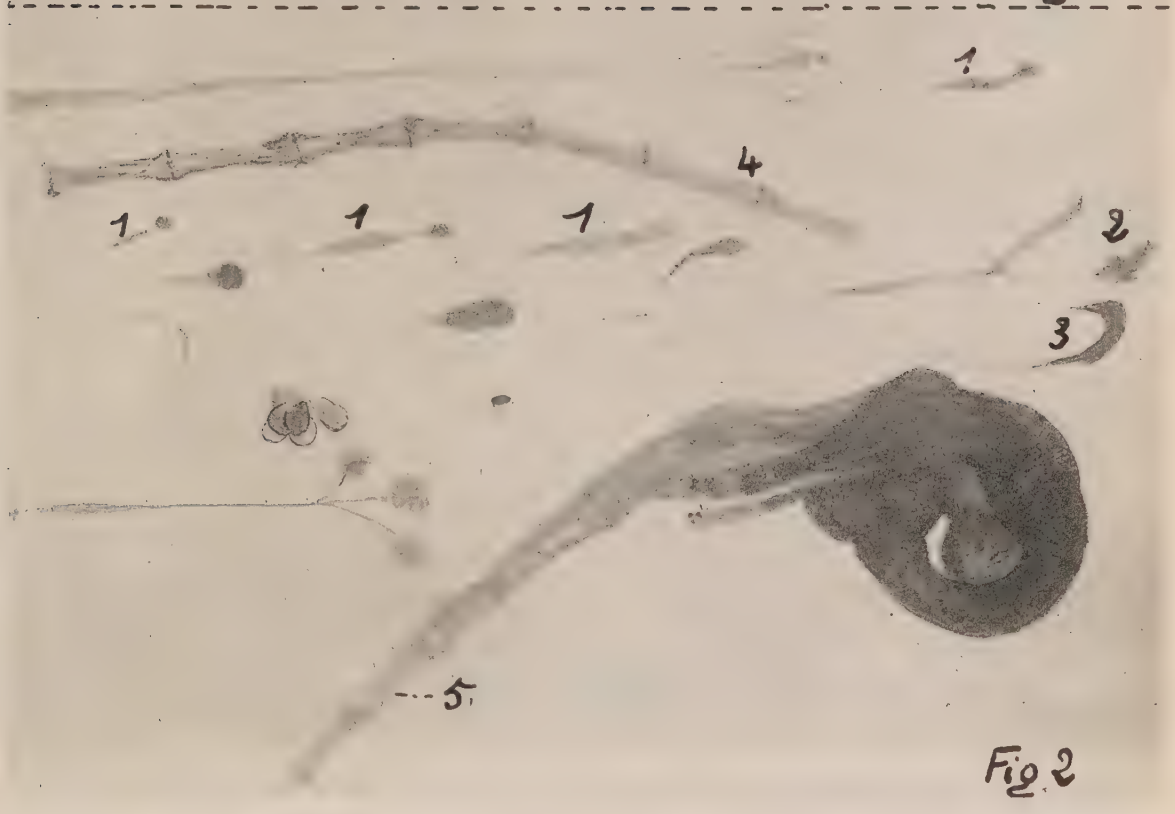

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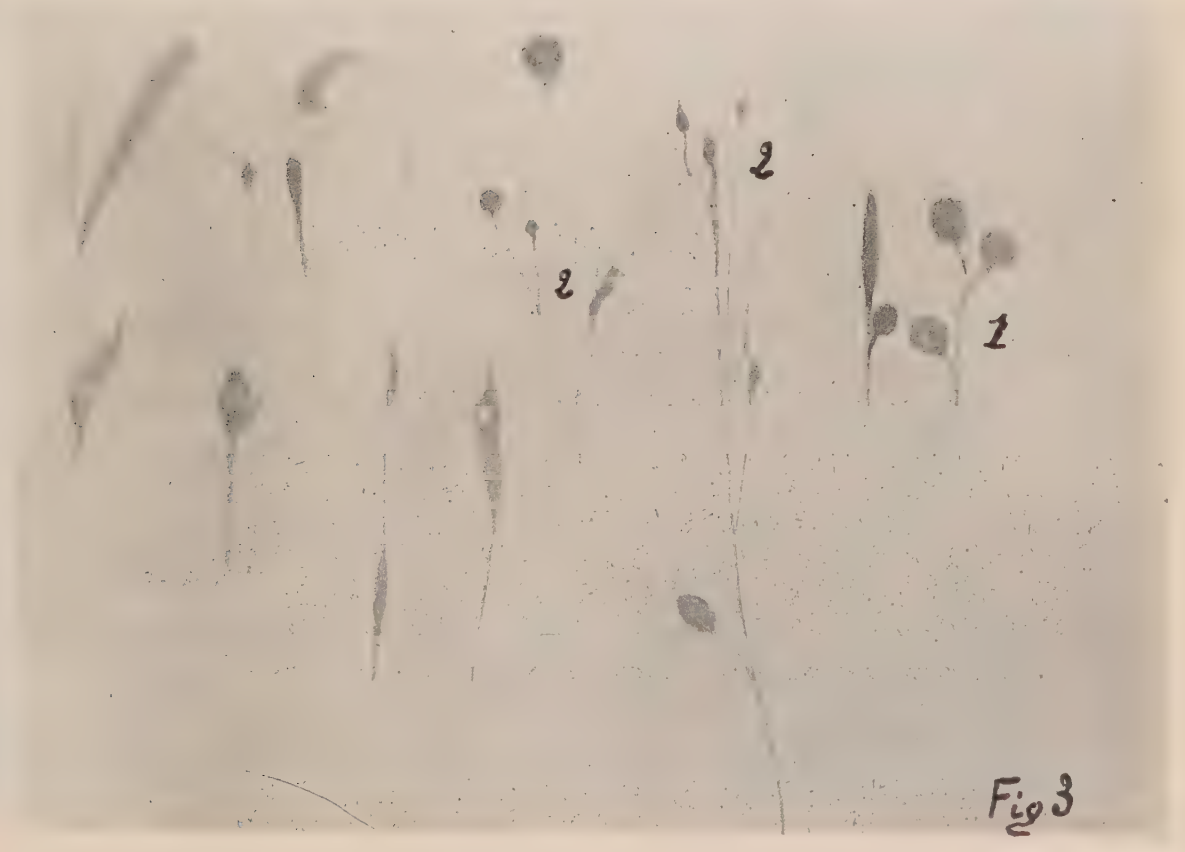

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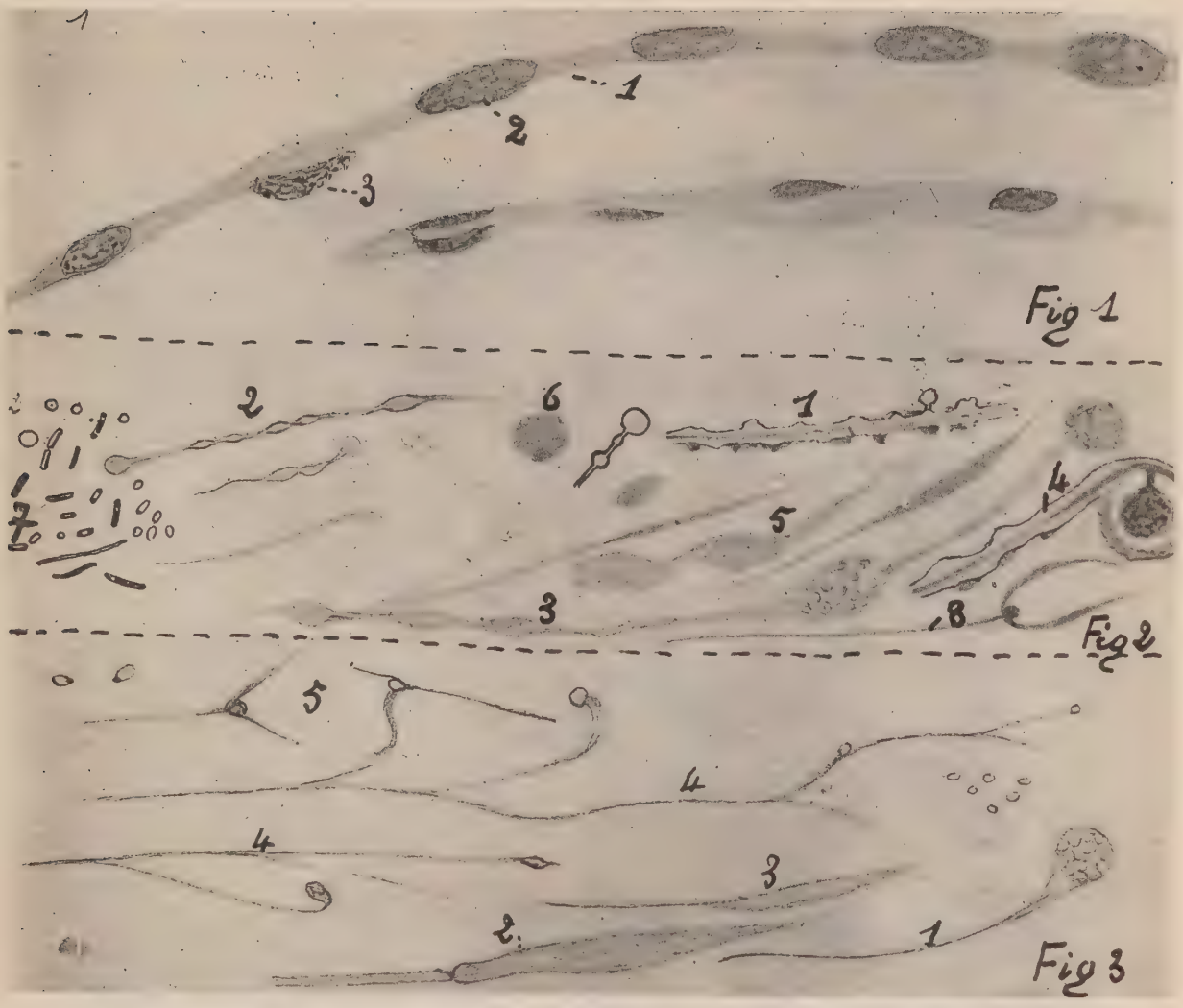
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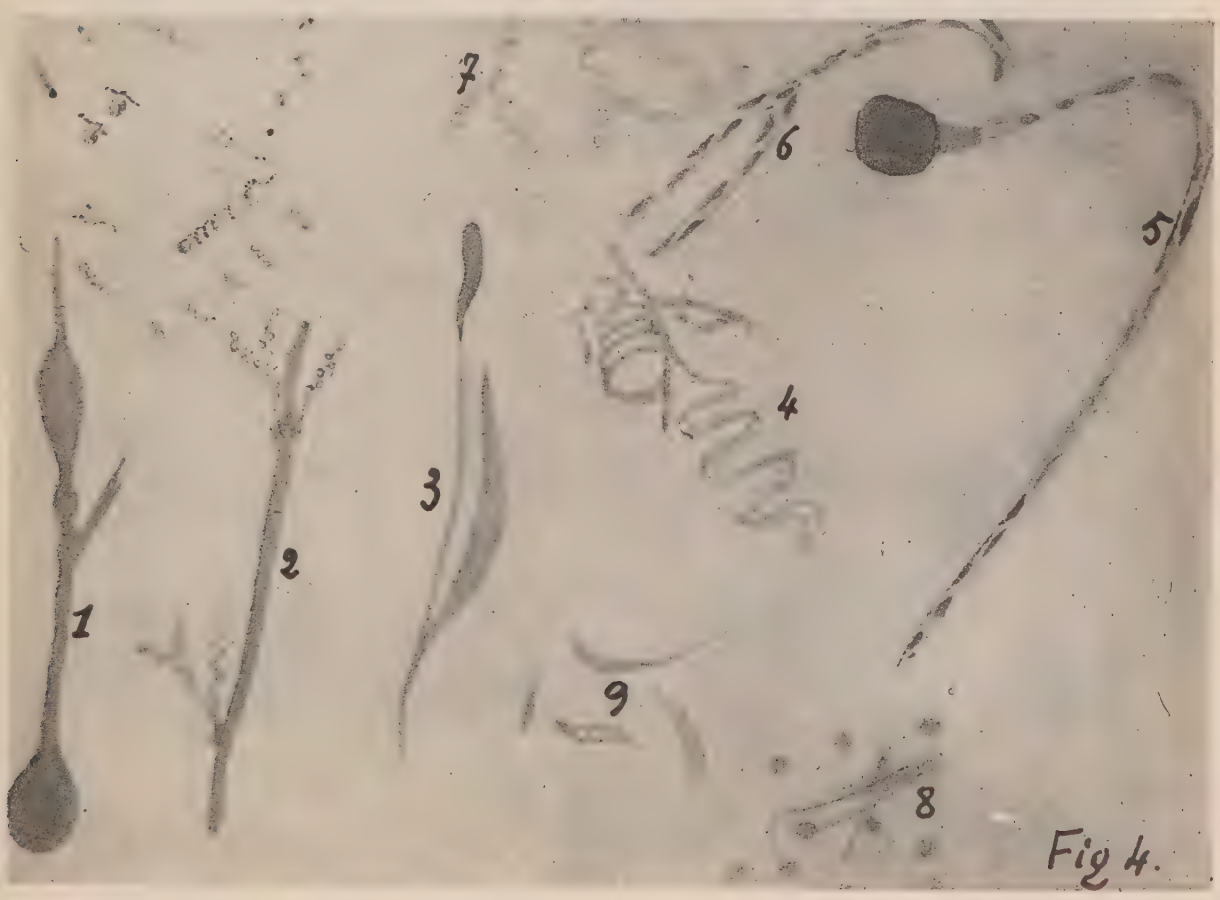
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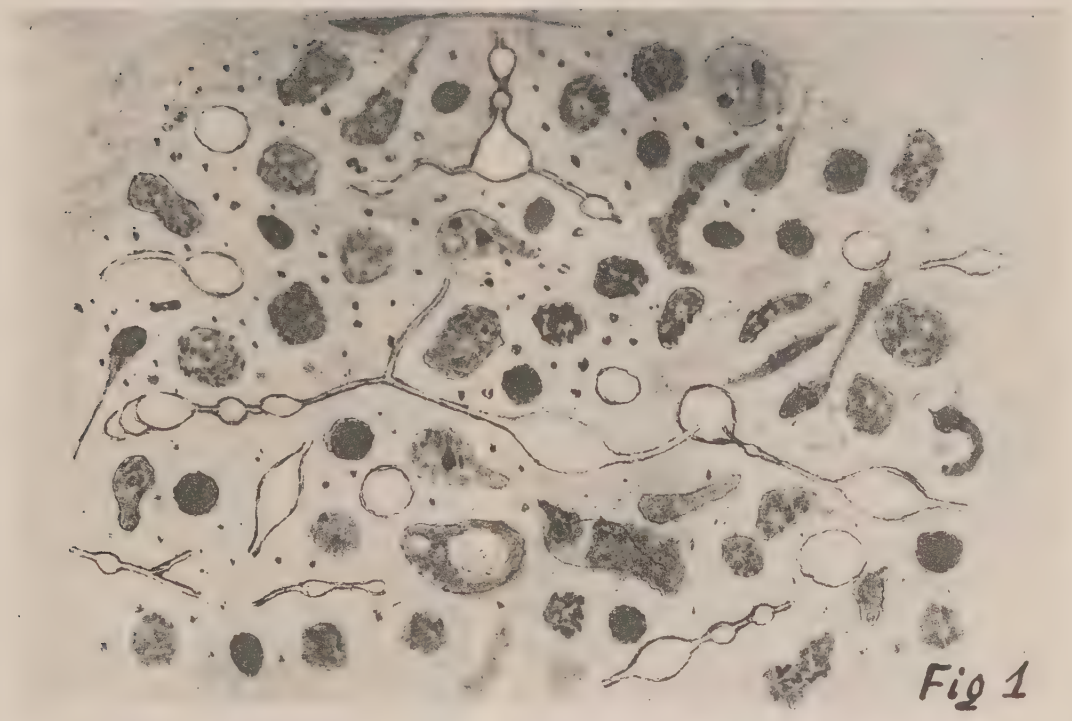

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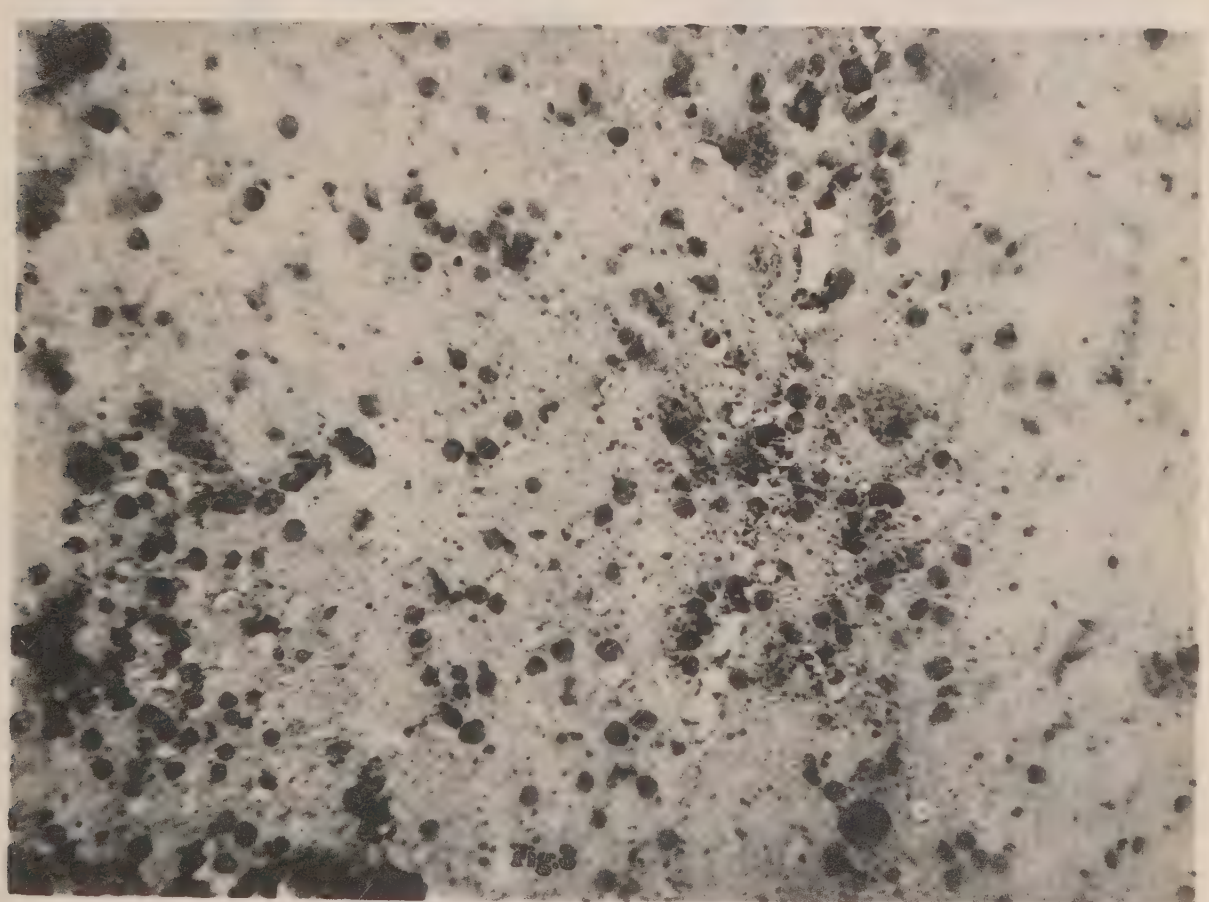

Fig.3

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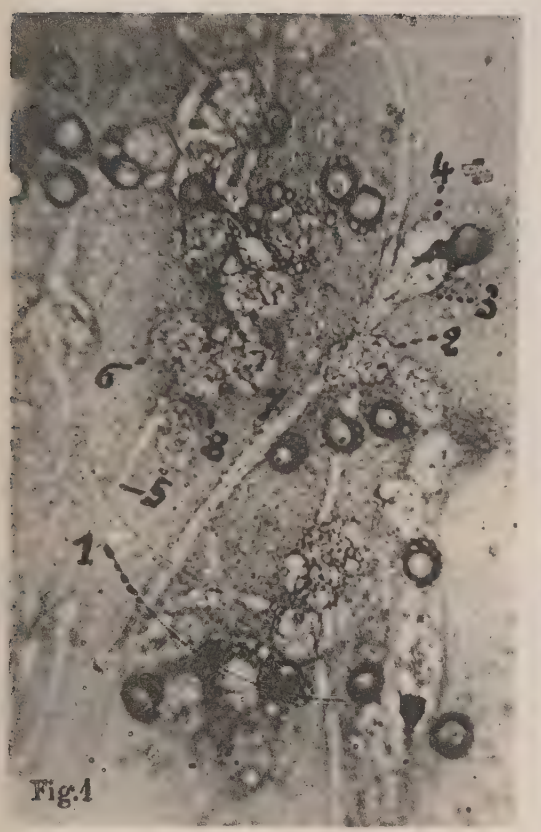

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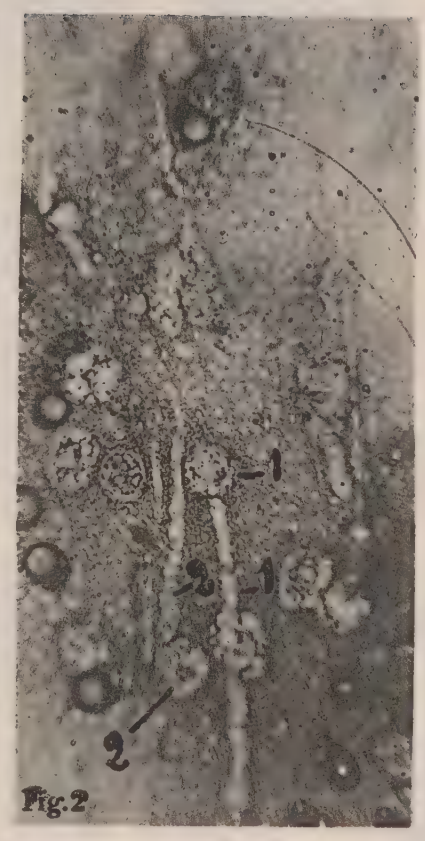

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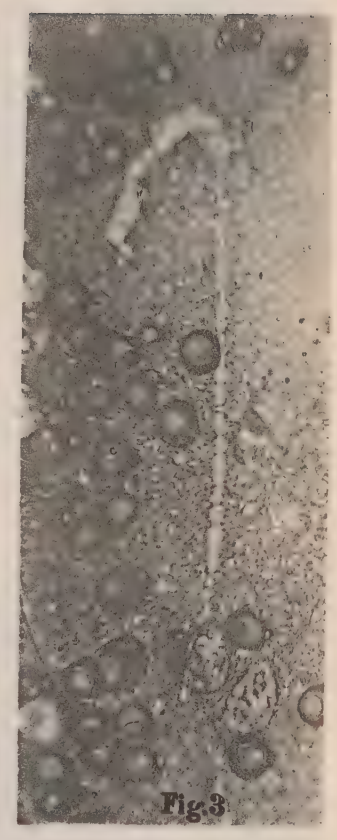
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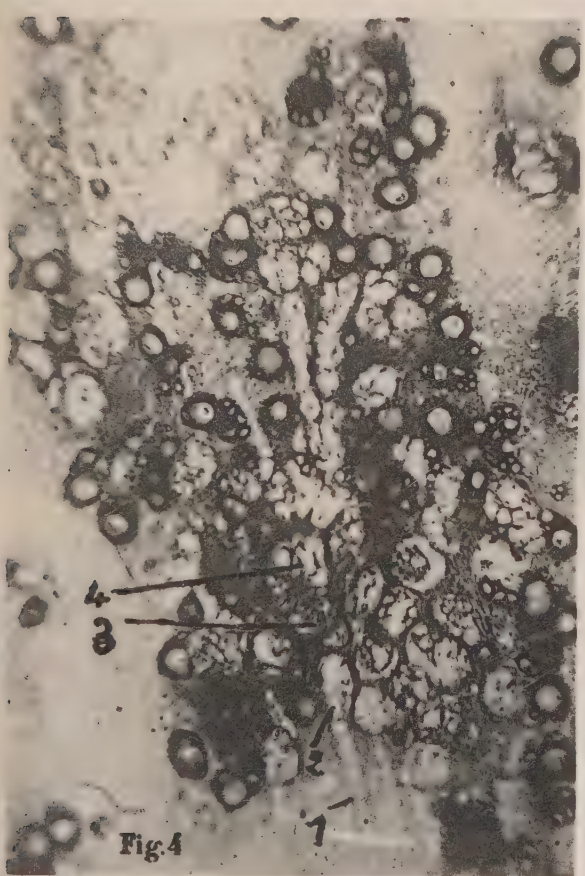

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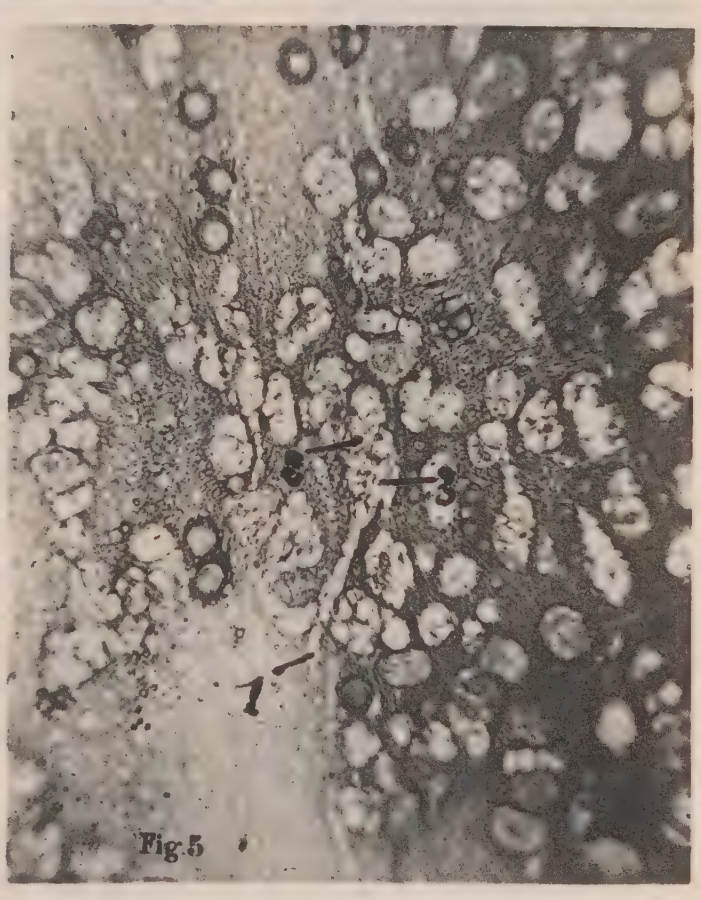

Fig.5

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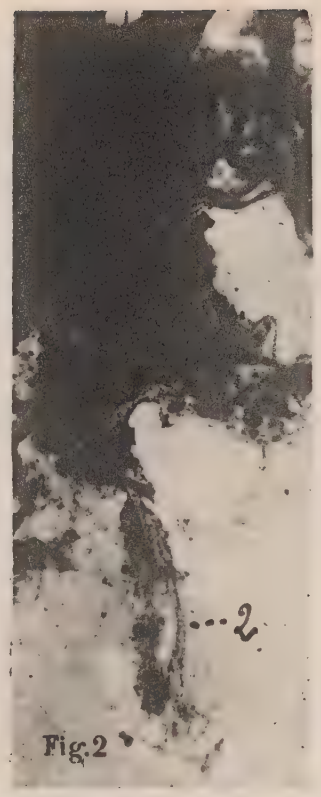

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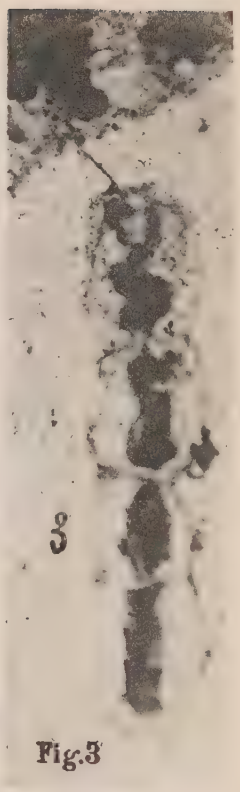

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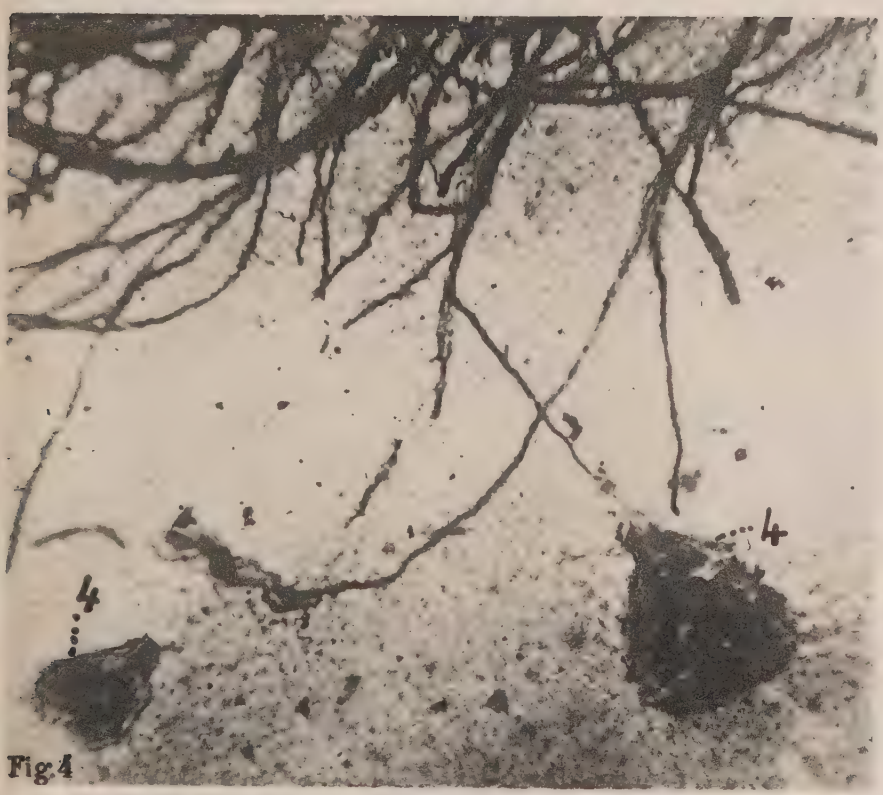

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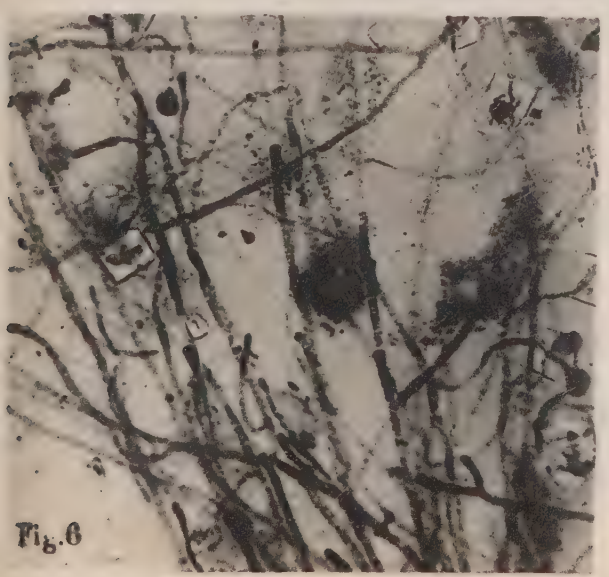
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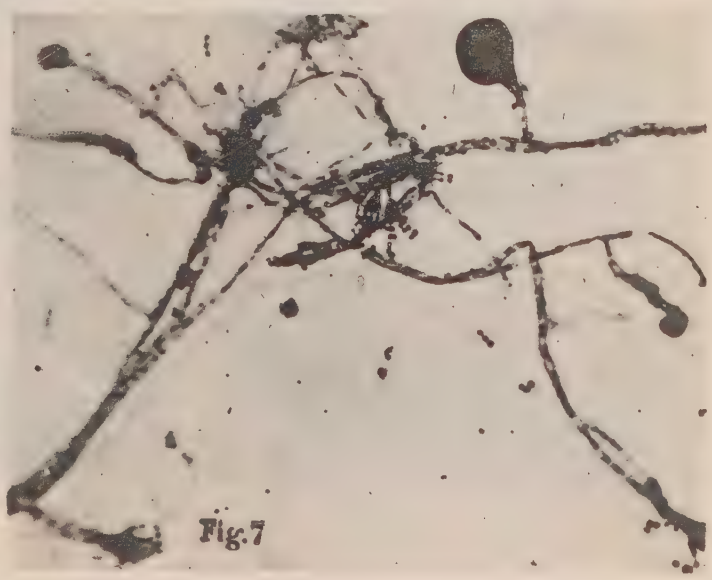
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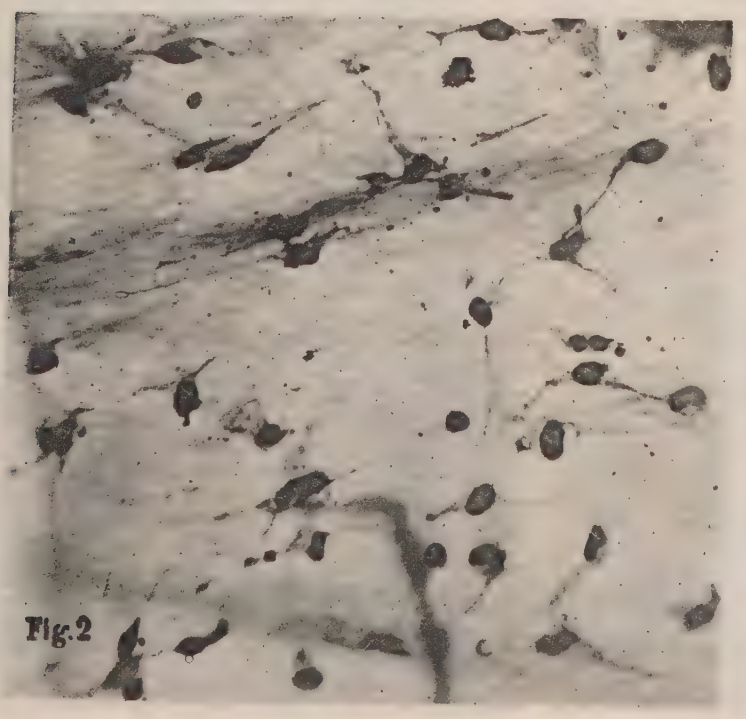

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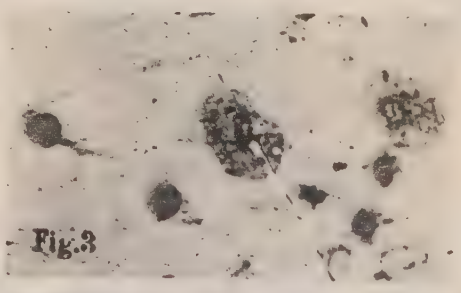

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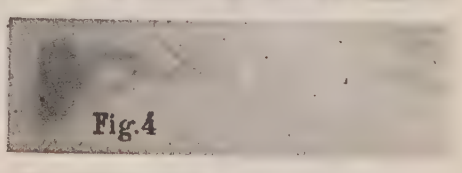

Fig.4

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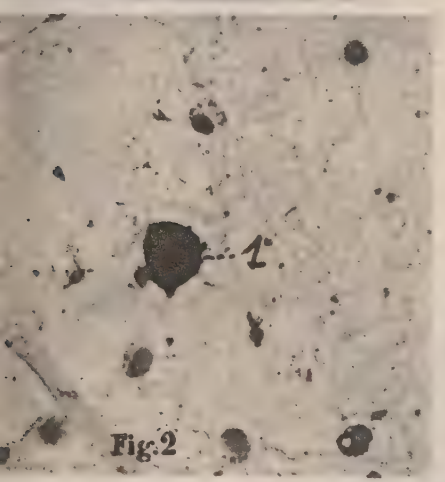

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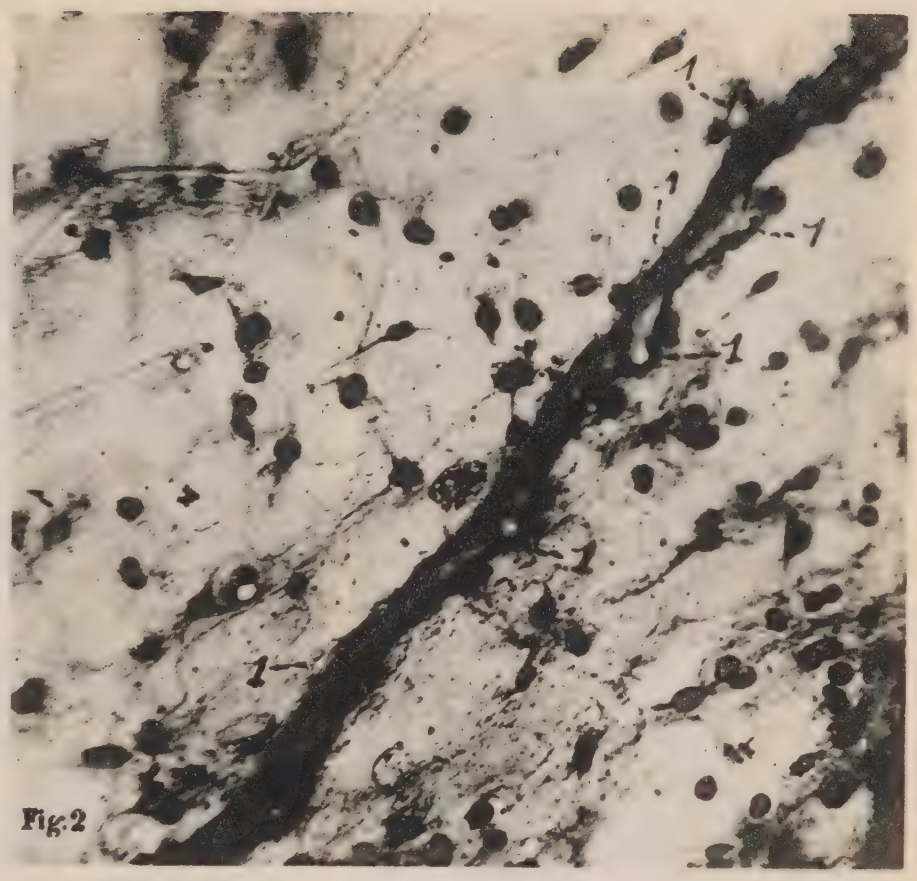

Fig.2

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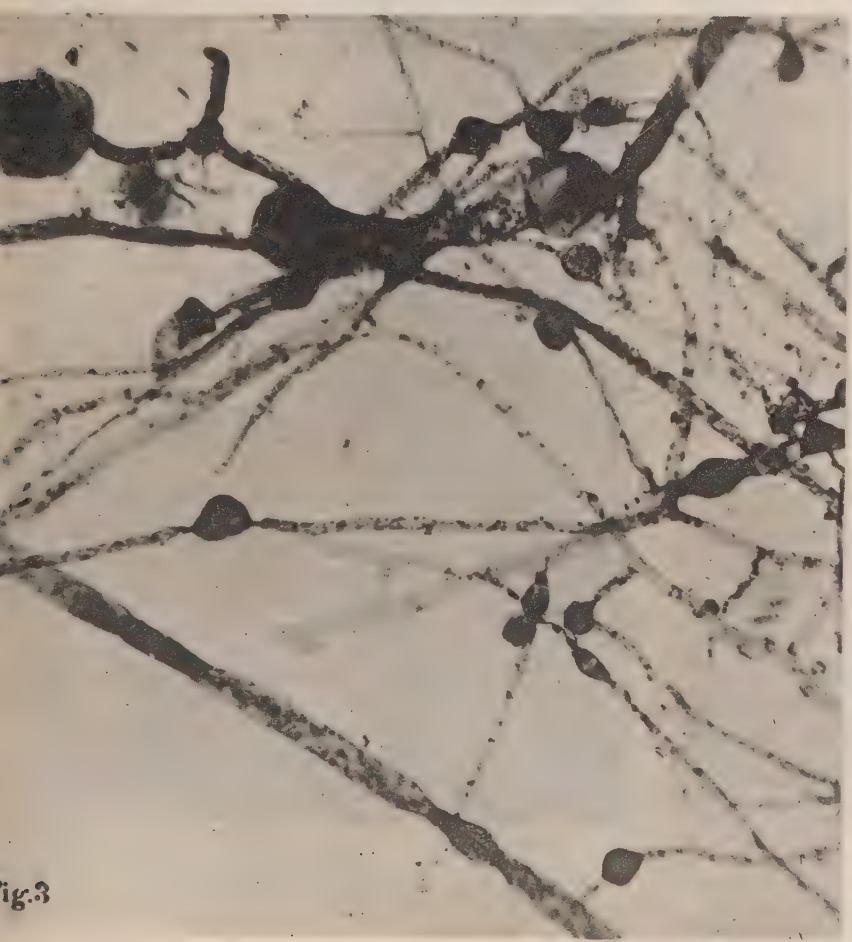

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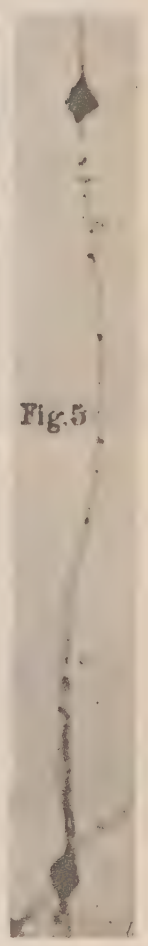

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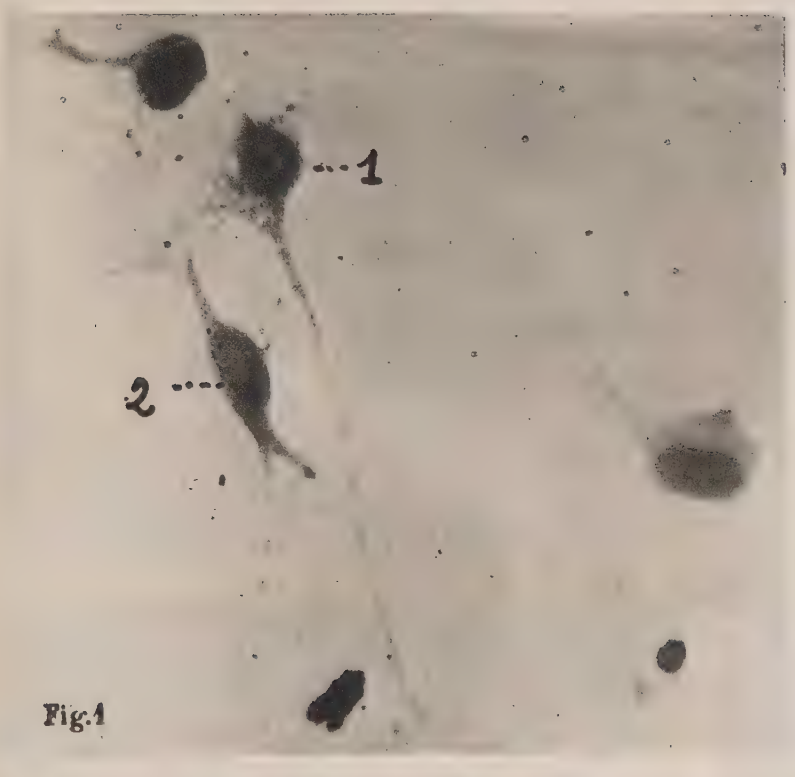

Fig.1

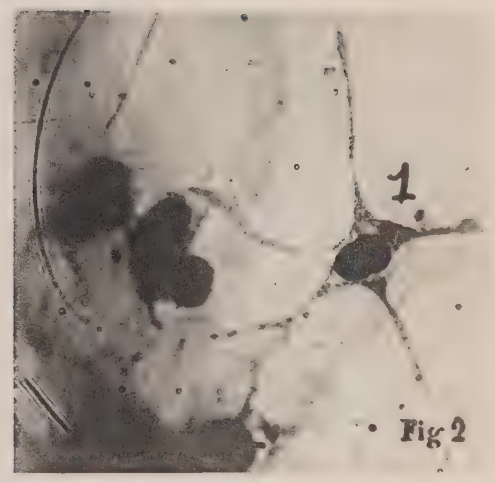

Fig.2

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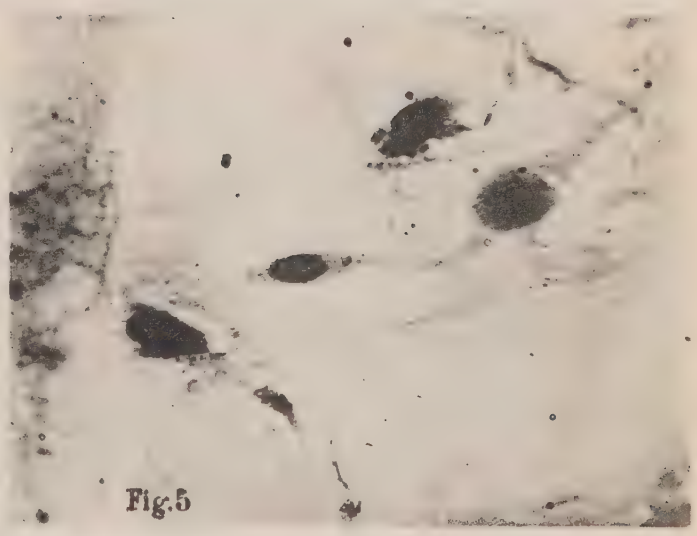
Fig.4



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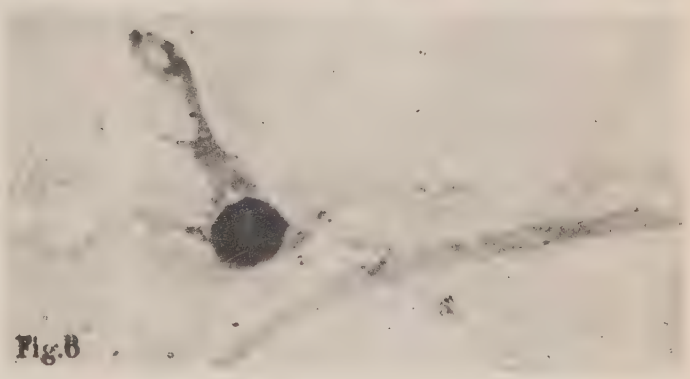

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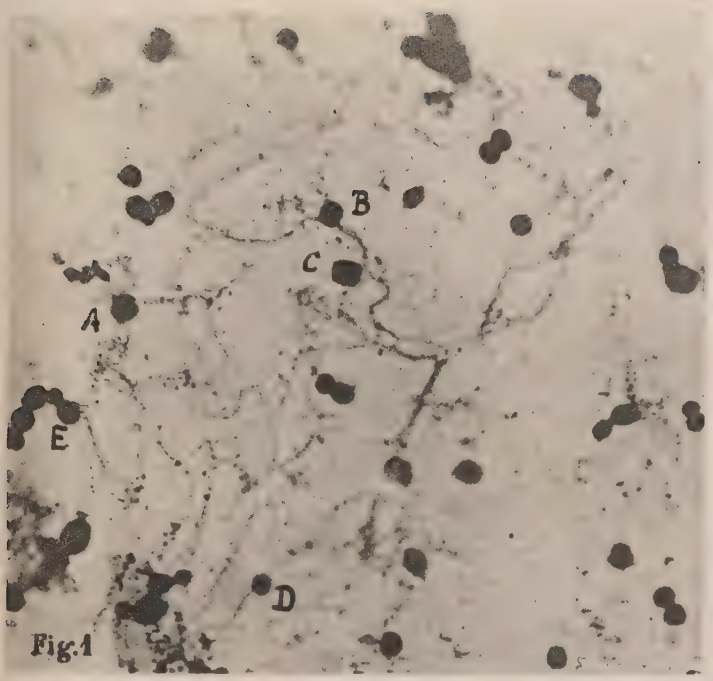
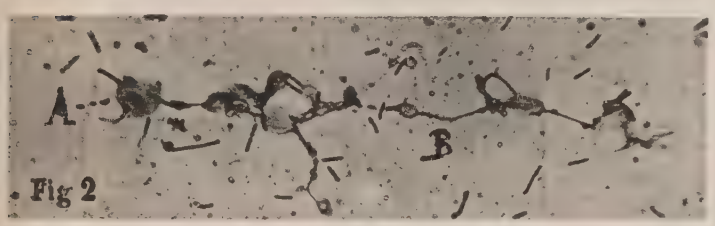


Fig.1



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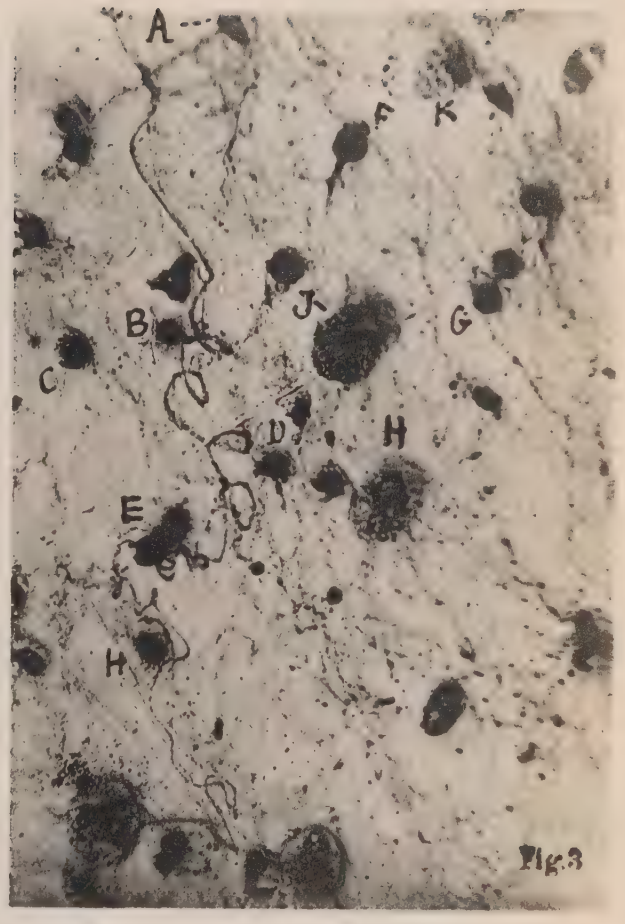

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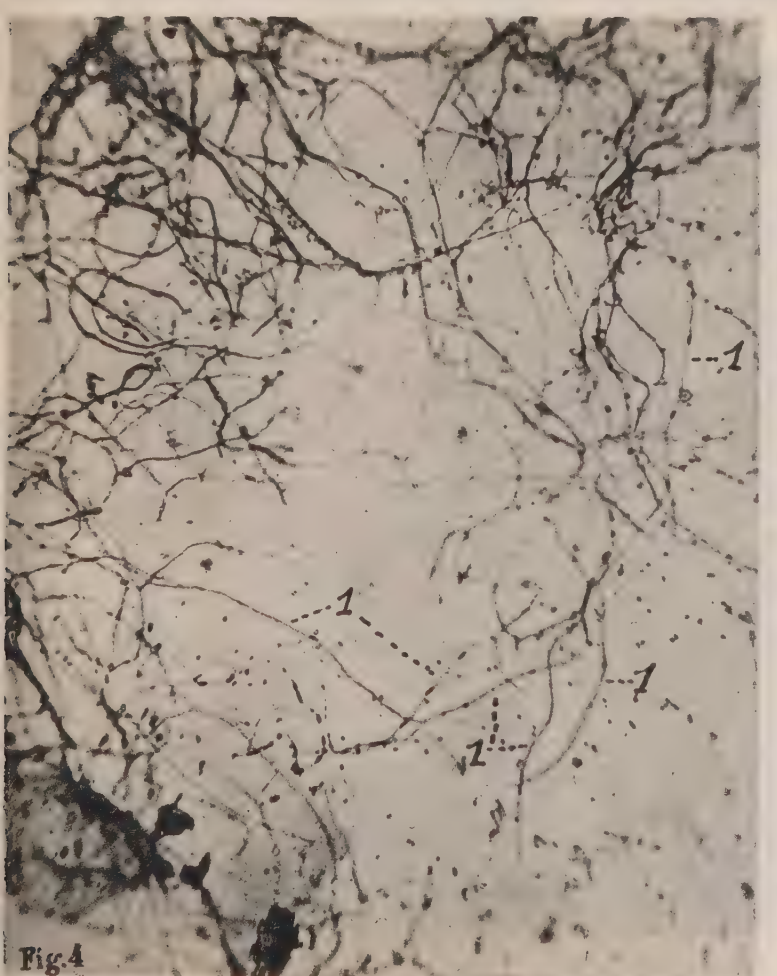

Fig.4

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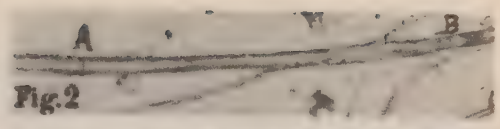

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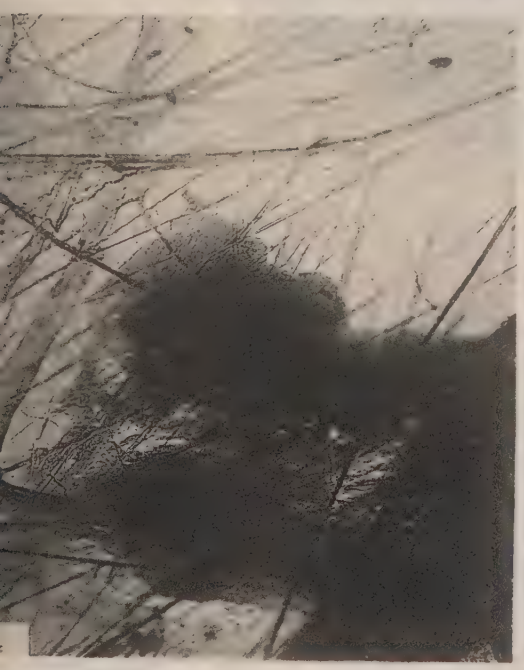

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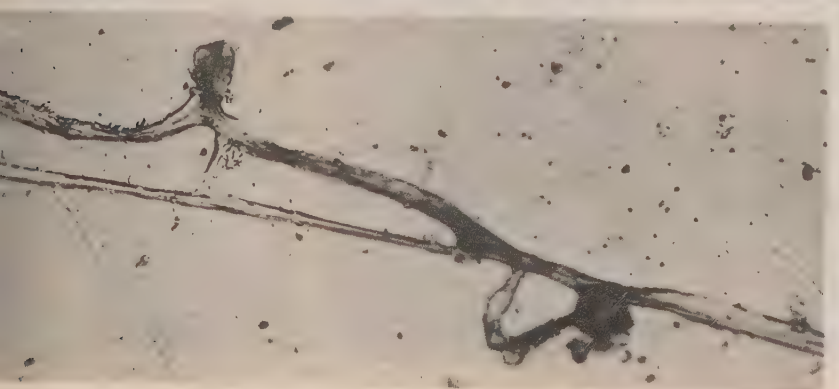

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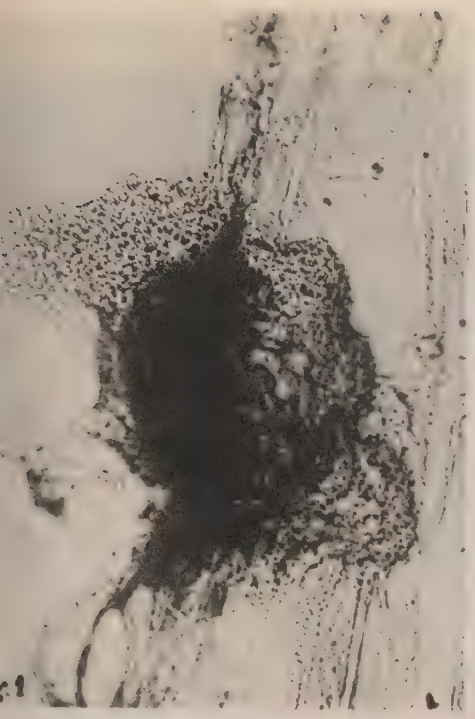

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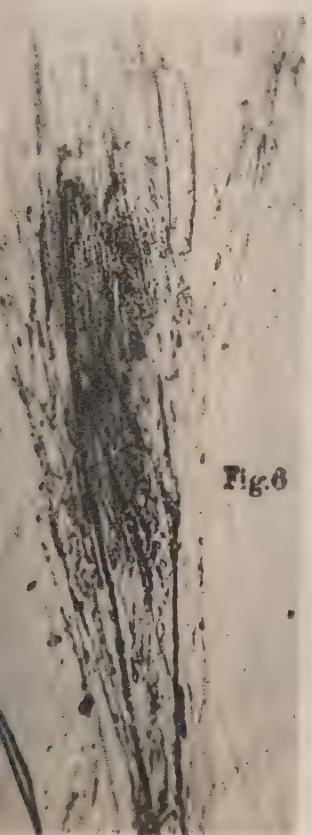

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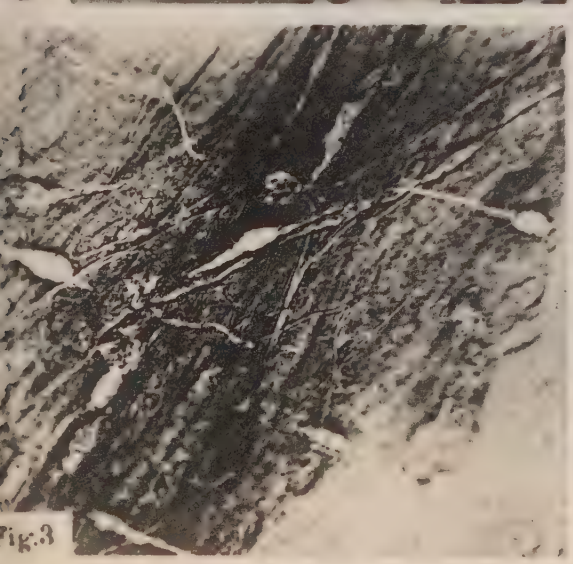

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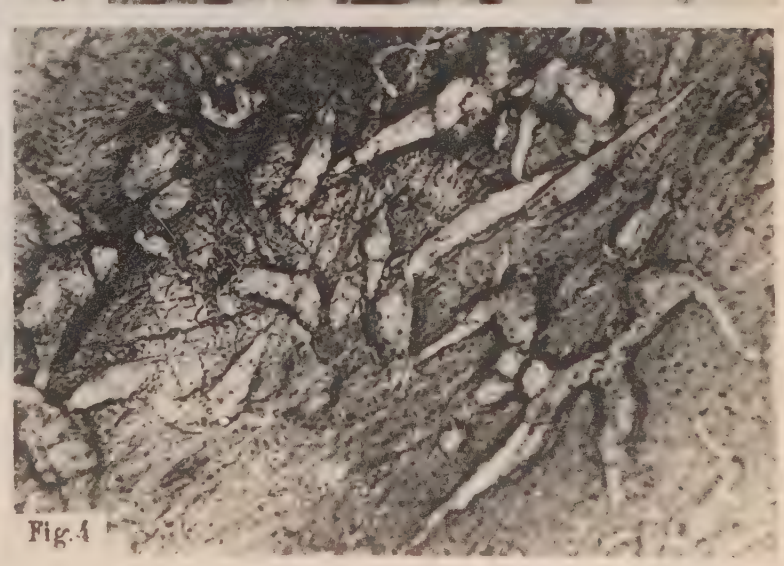

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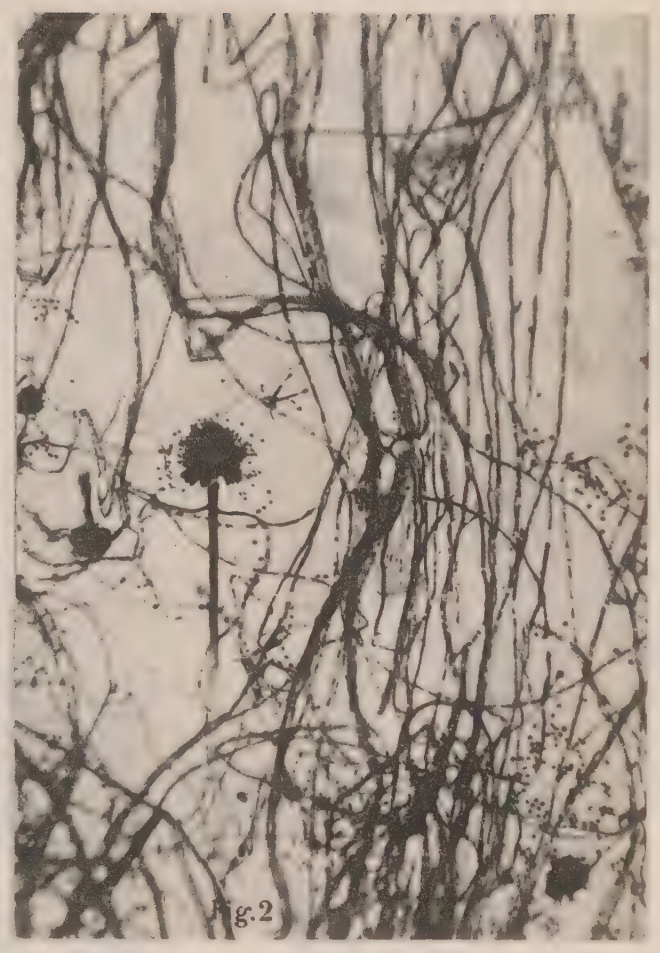

Fig.2

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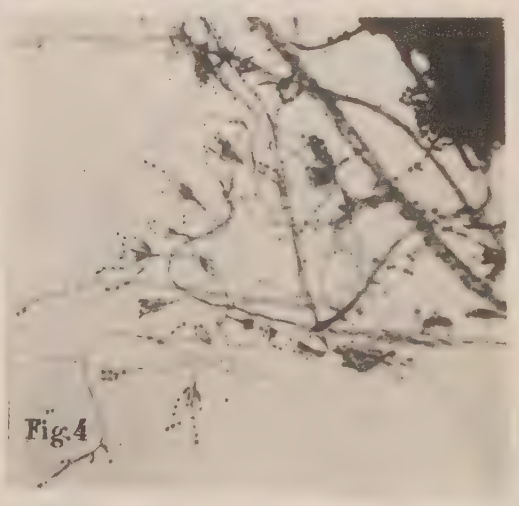

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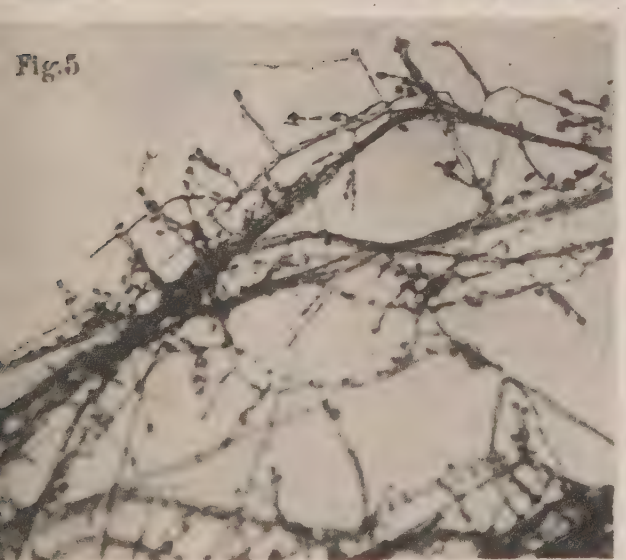

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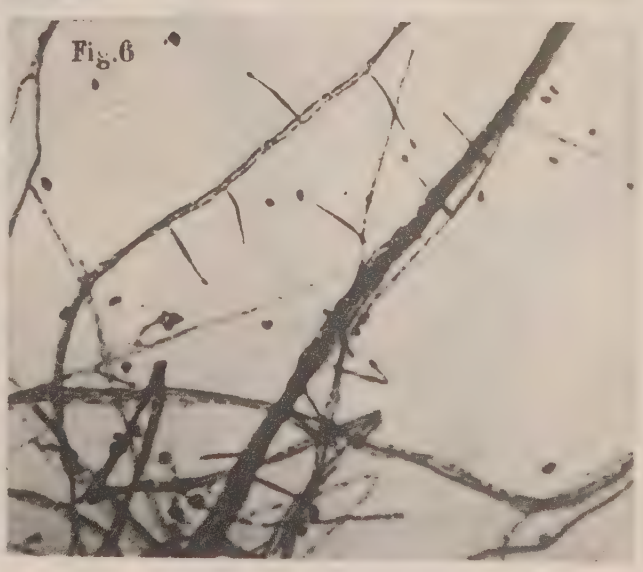

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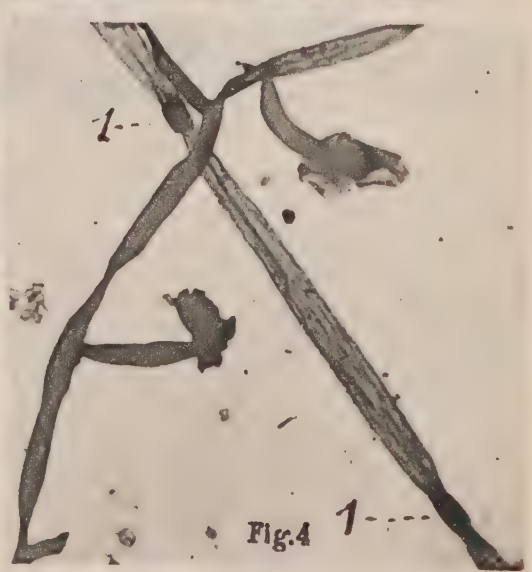

Fig.4

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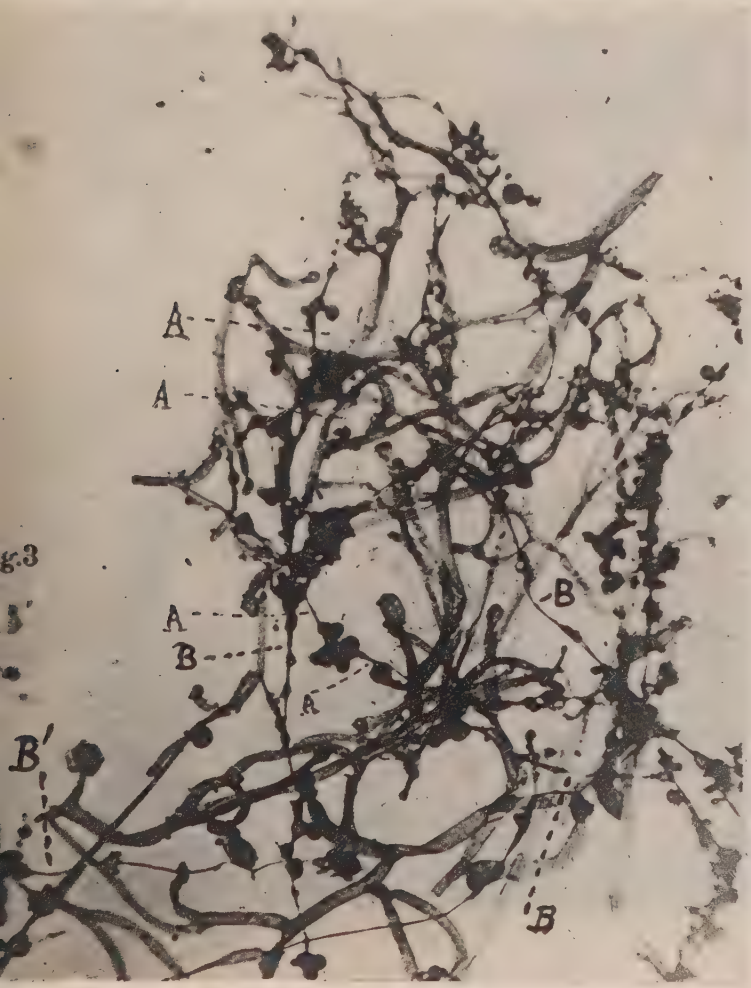

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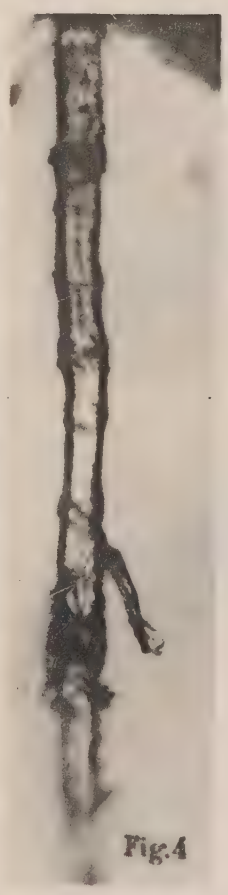

Fig.4

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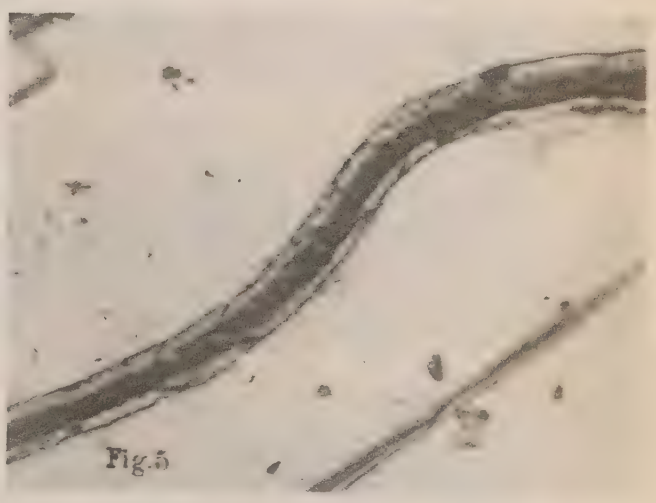
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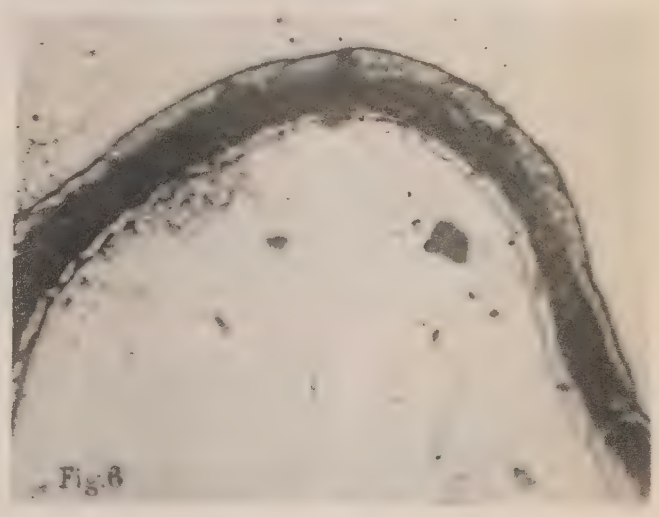
Fig.6

Fig. 1

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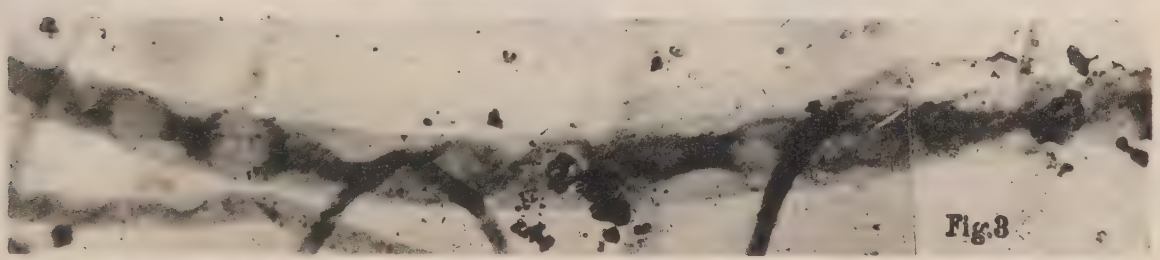
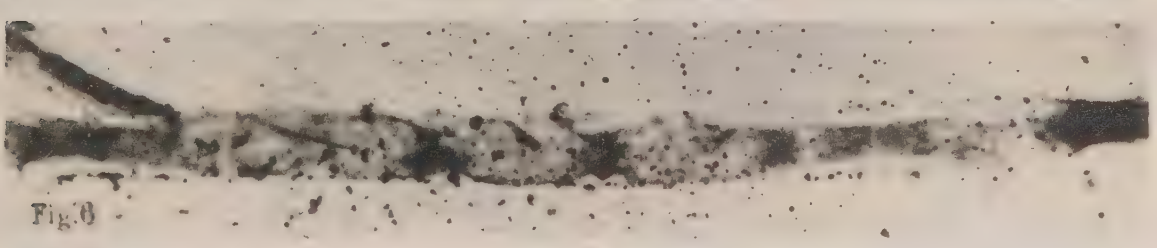


Fig.3

Fig.4

Fig.5



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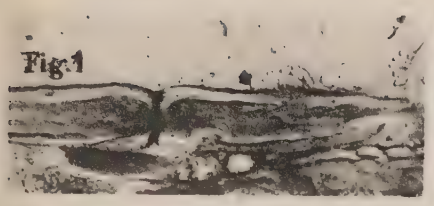
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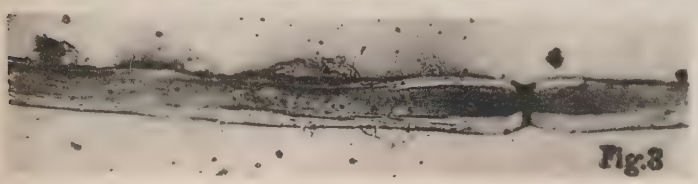
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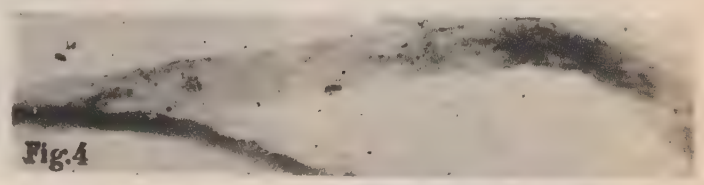
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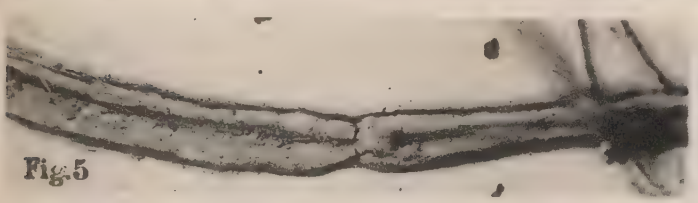
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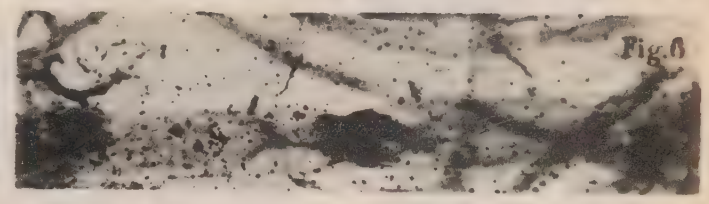
Fig.6

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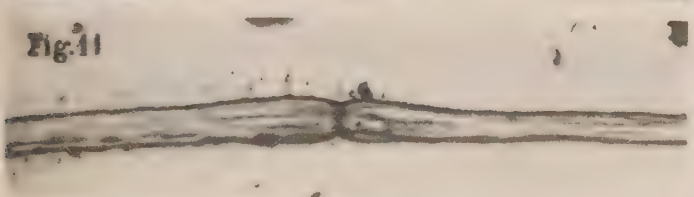
Fig.10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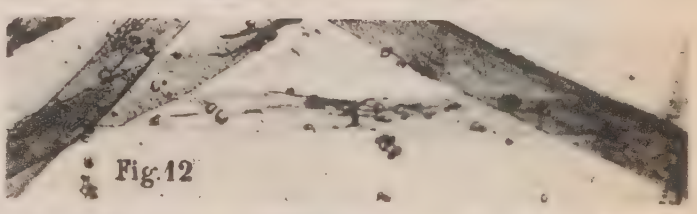
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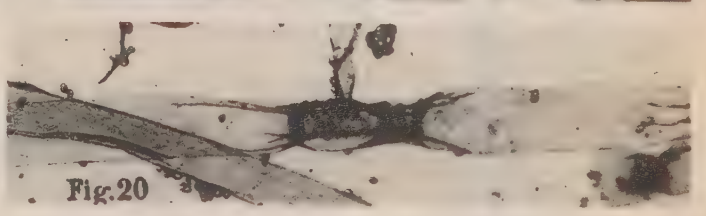
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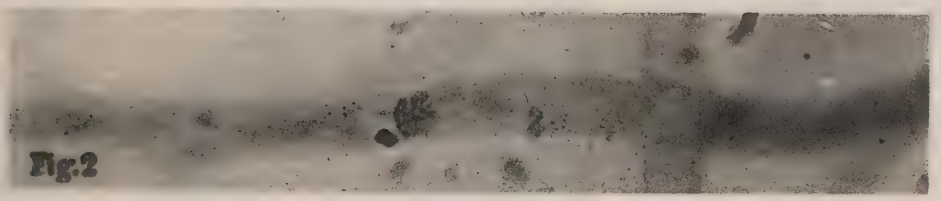
Fig.1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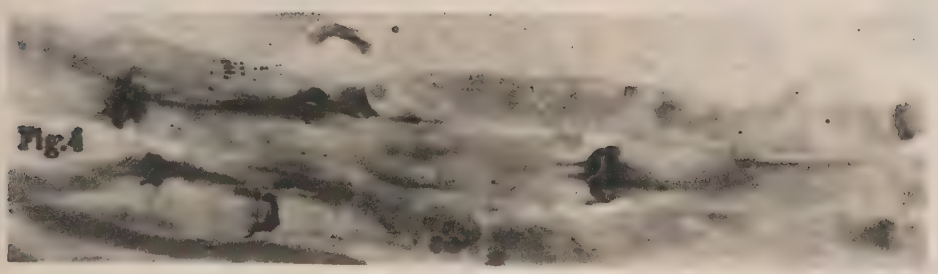
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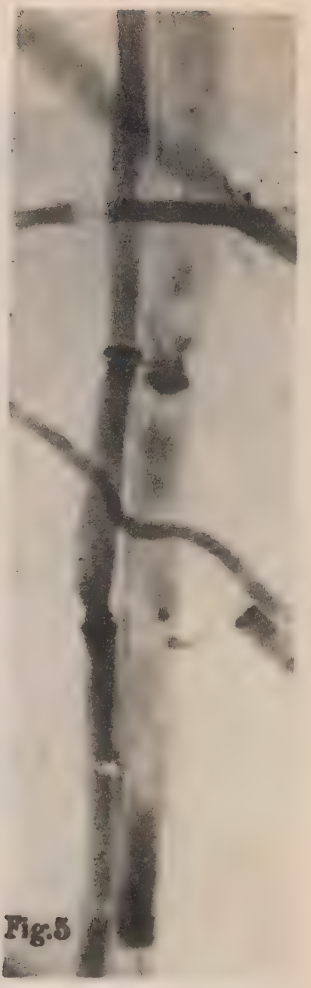
Fig.5

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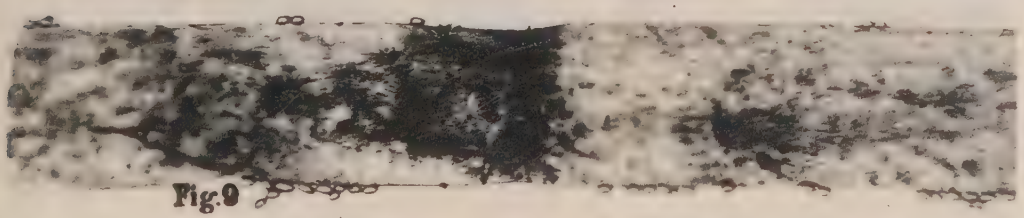
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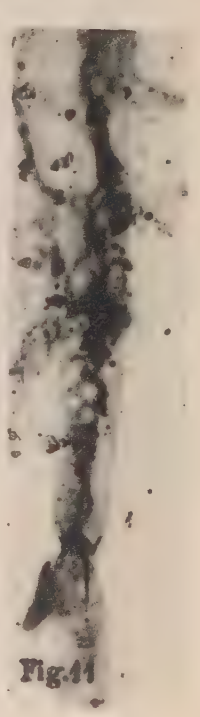
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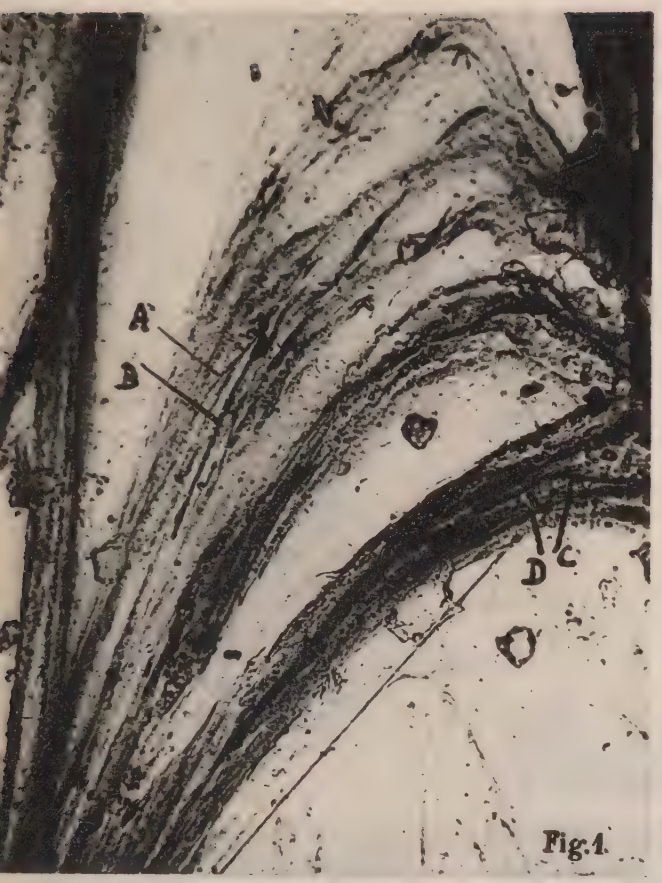

Fig.1.

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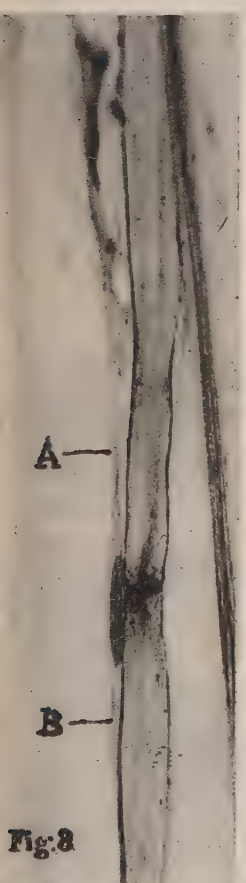


Fig.3

Fig.4

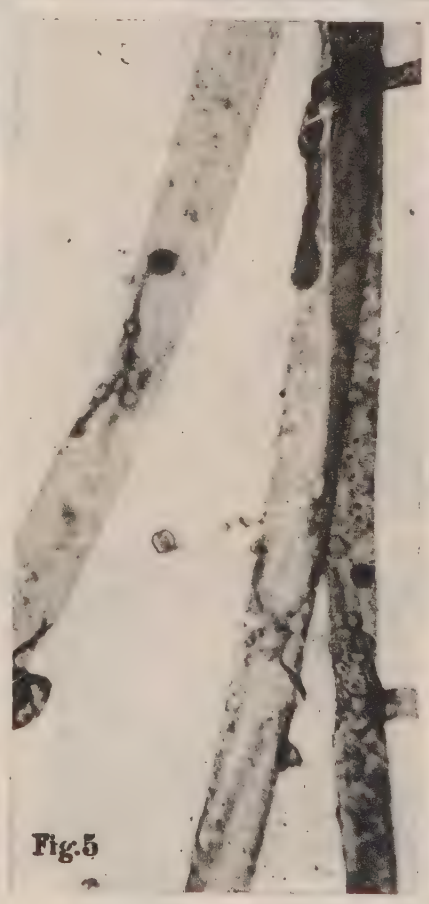
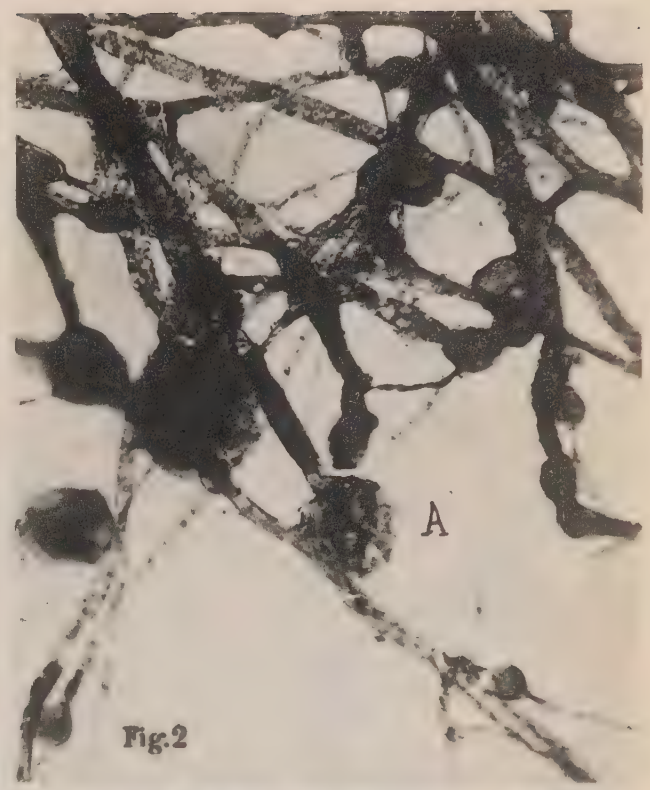


Fig.5

Fig.6

Fig.1



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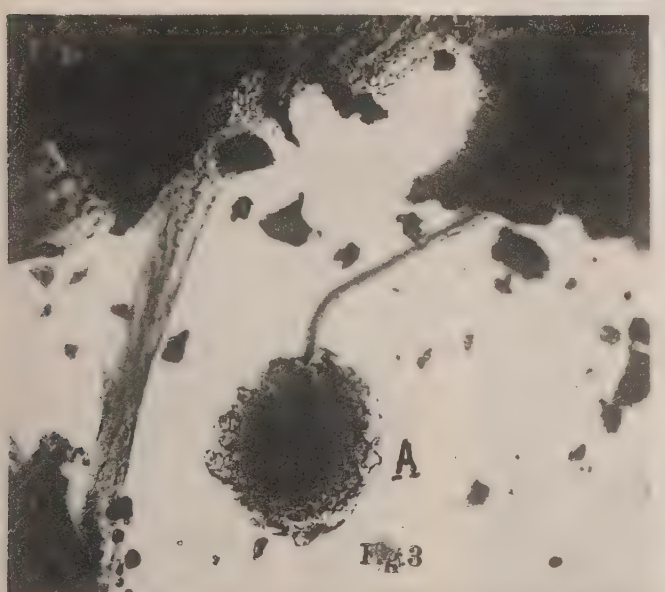

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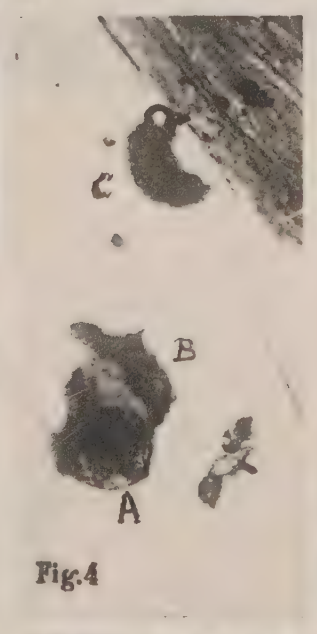

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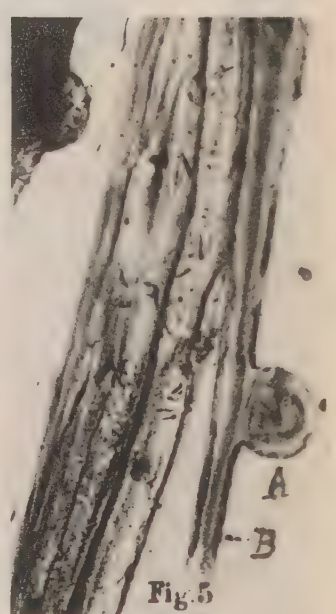

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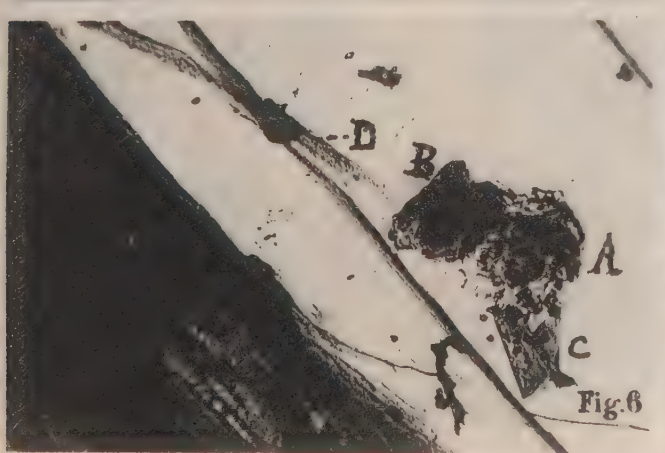

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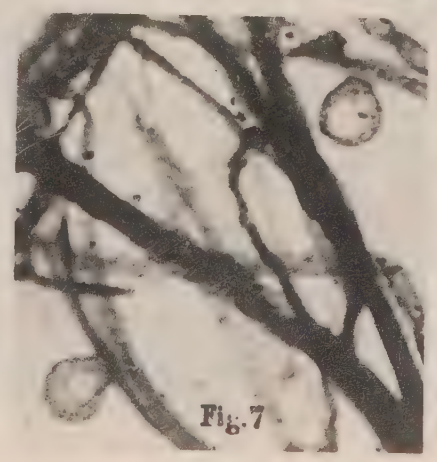
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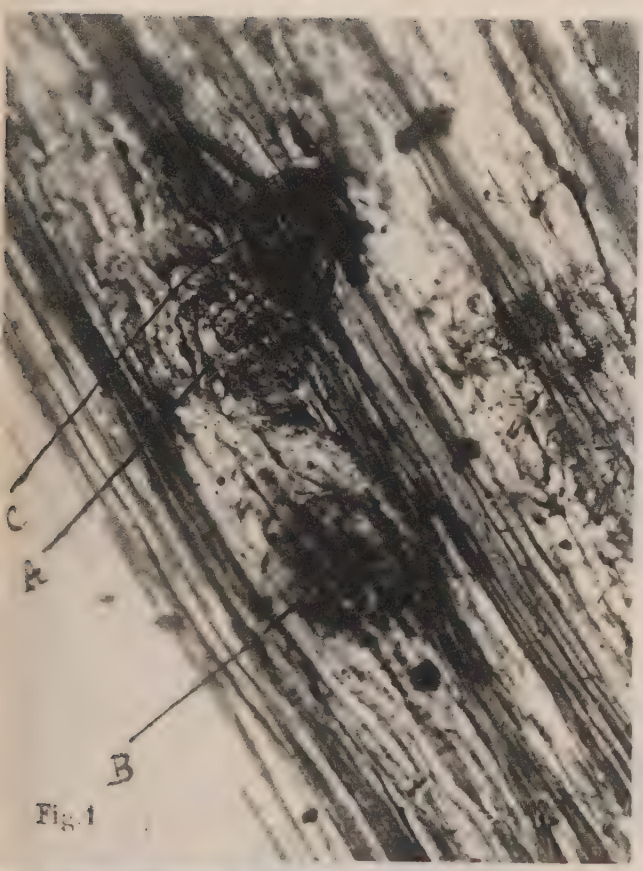

Fig.1

Fig.2

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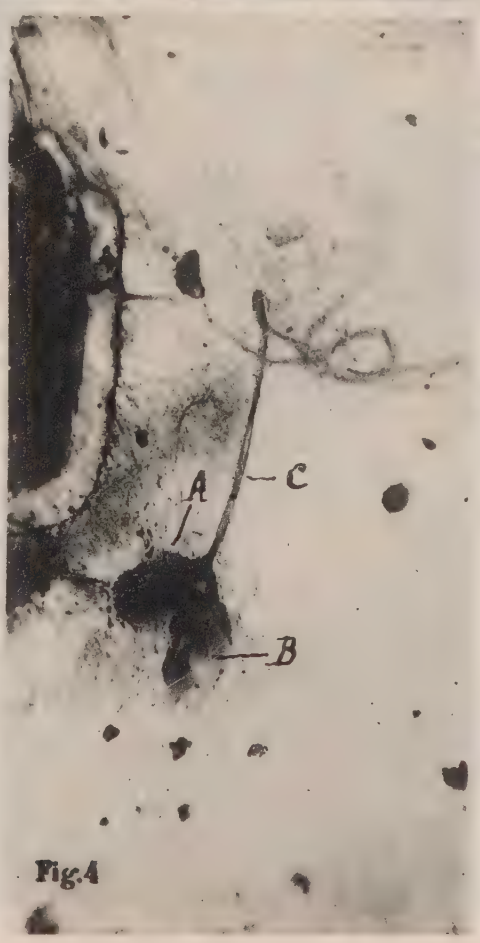

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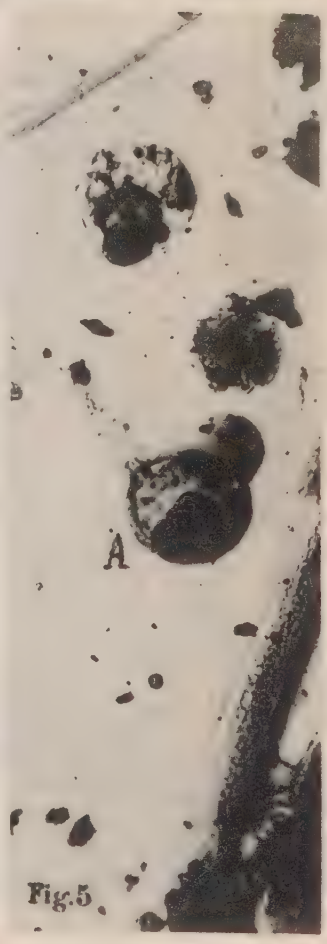

Fig.5

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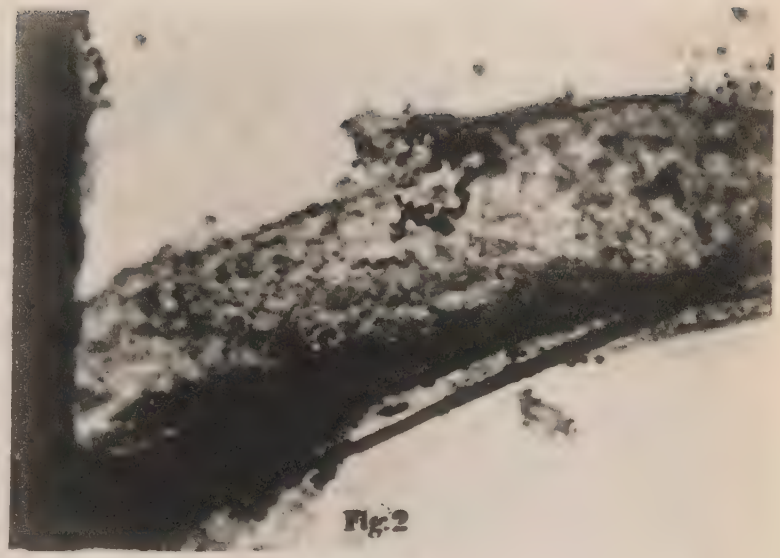


Fig.2

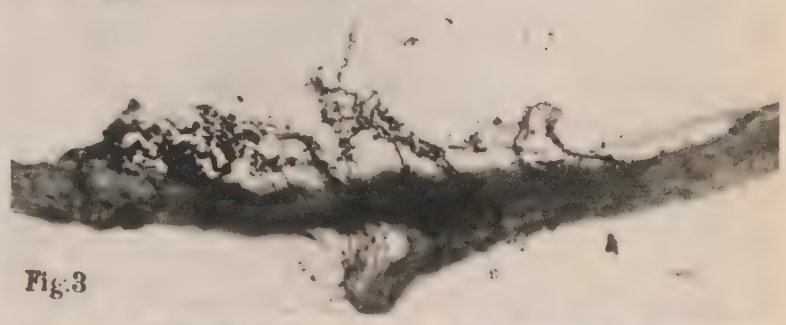
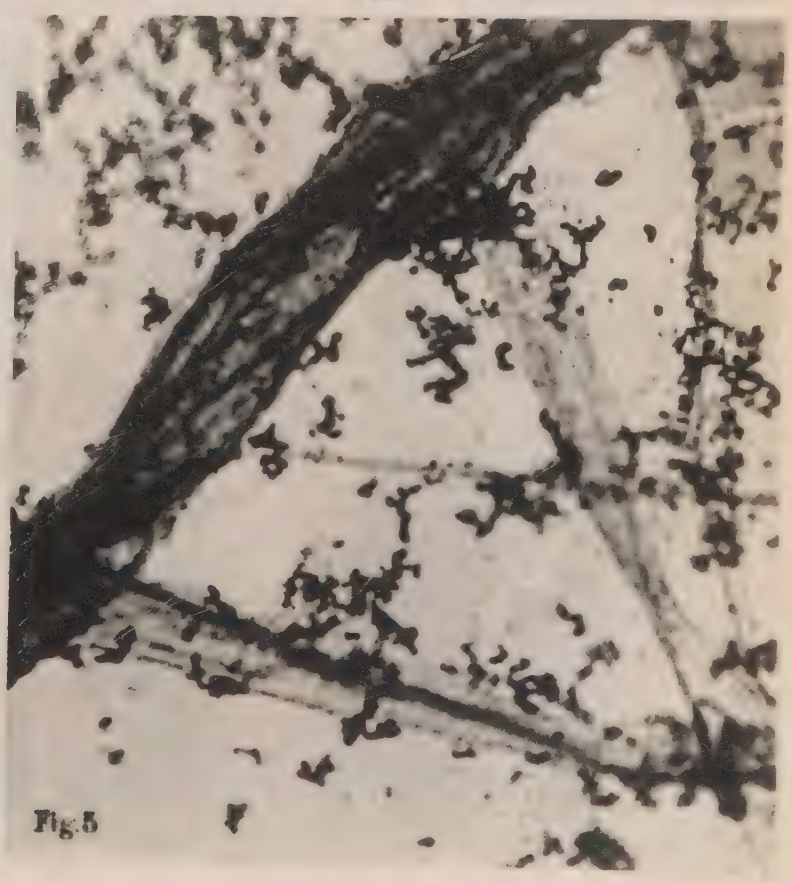


Fig.3

Fig.4



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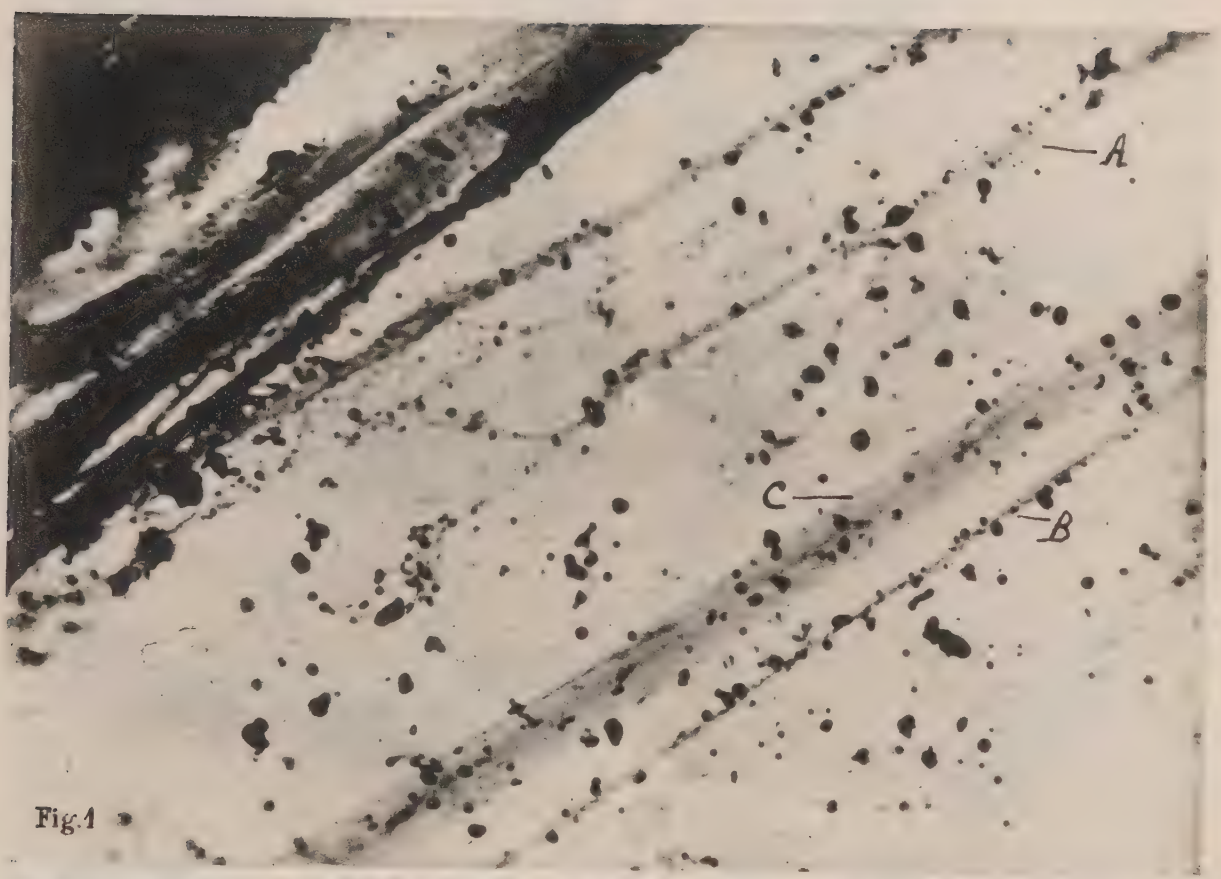

Fig.1

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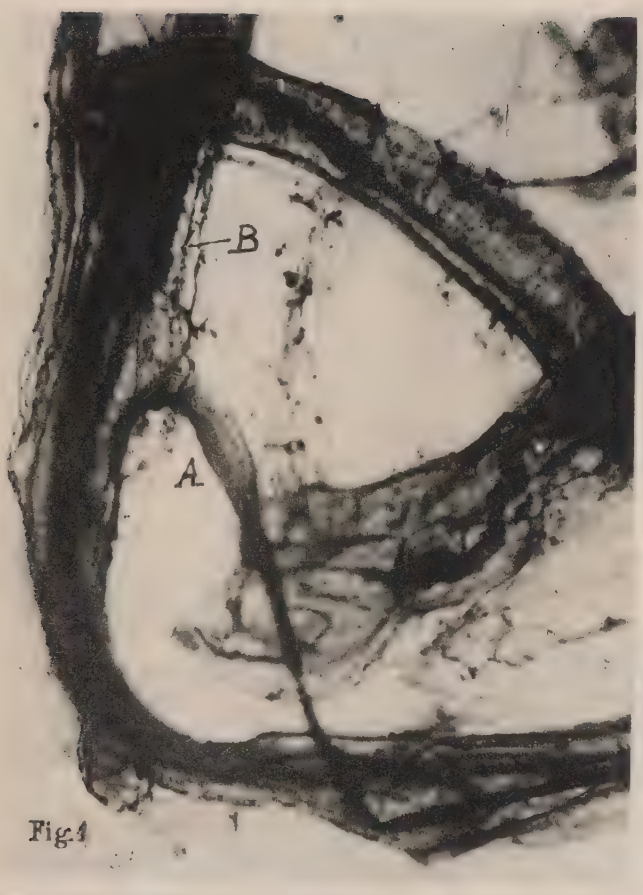

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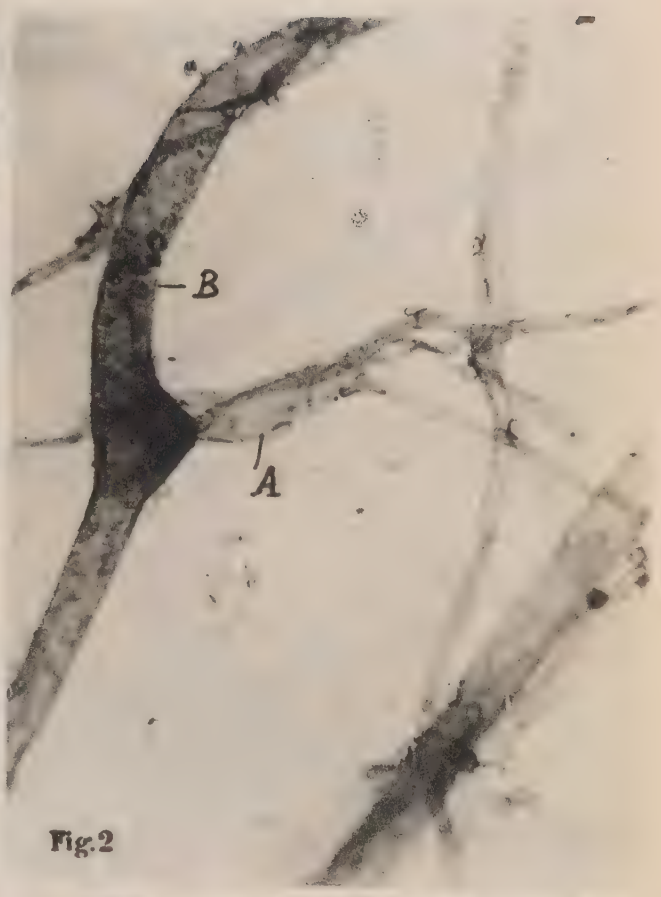

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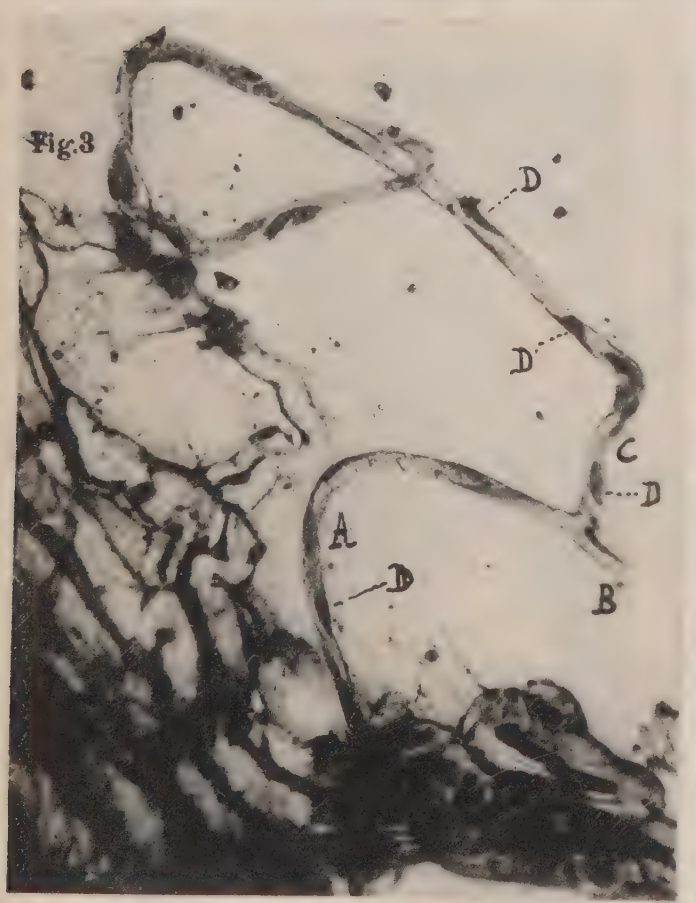

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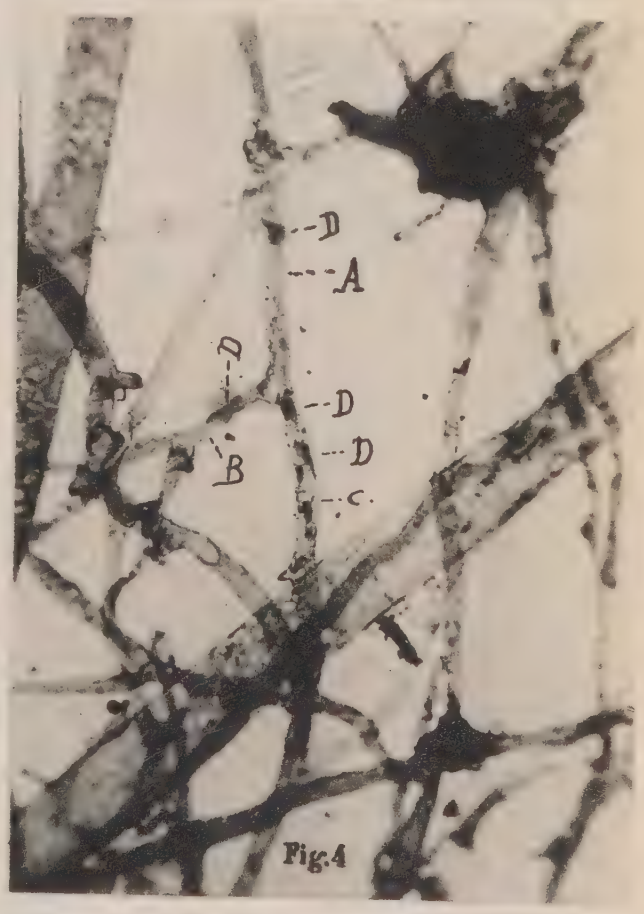

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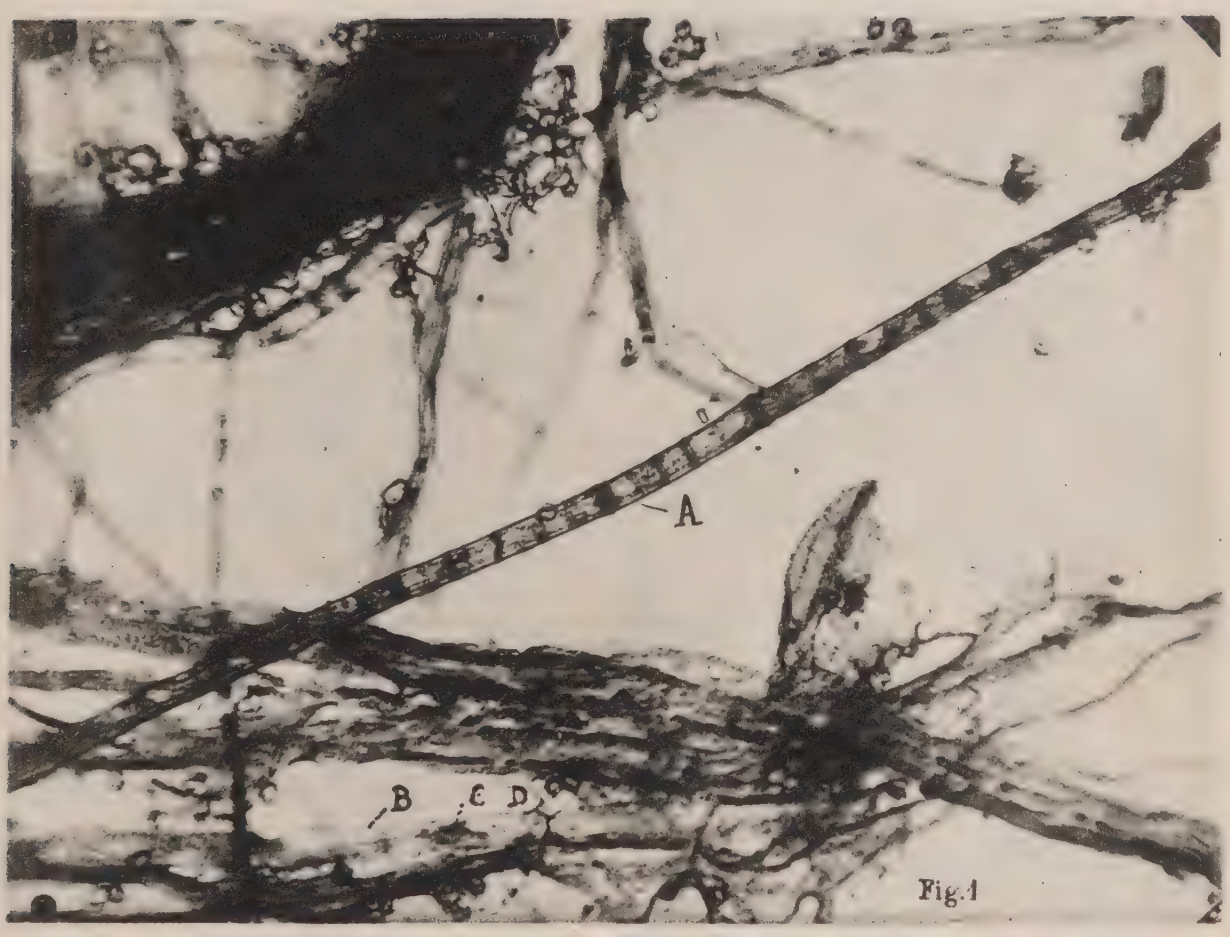

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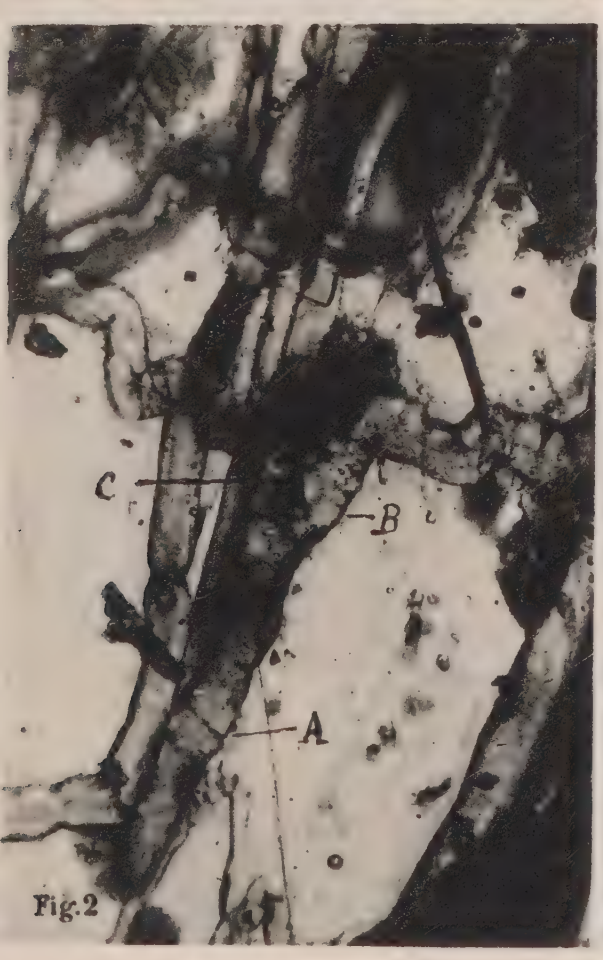

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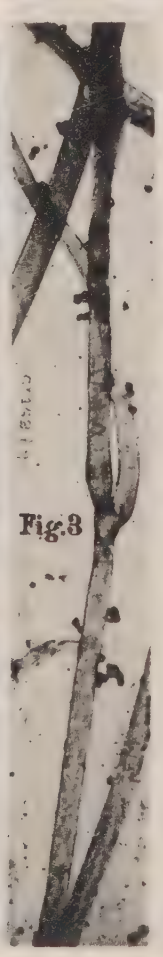

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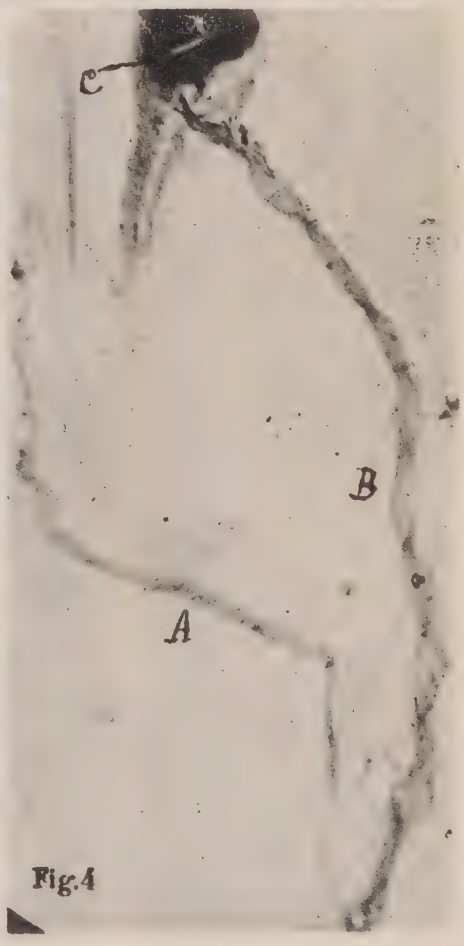

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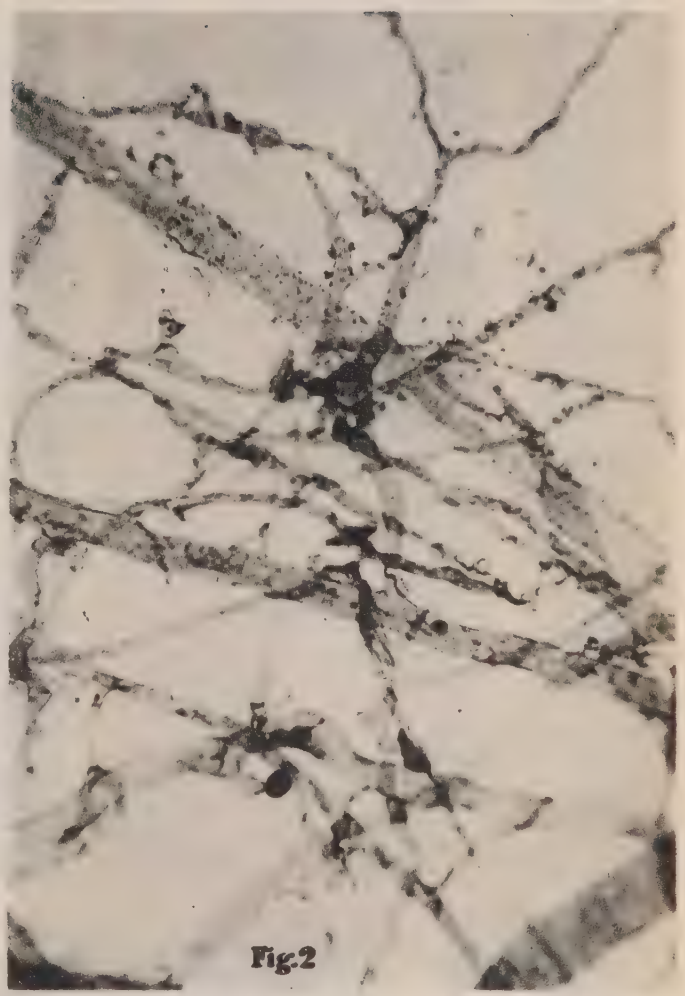

Fig.2

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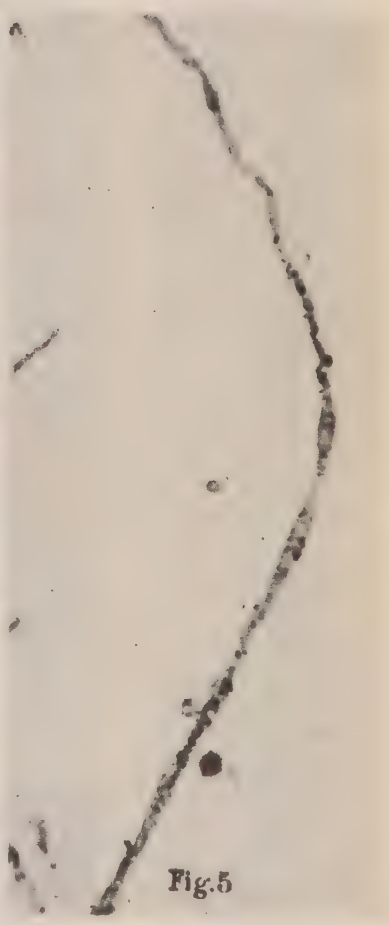

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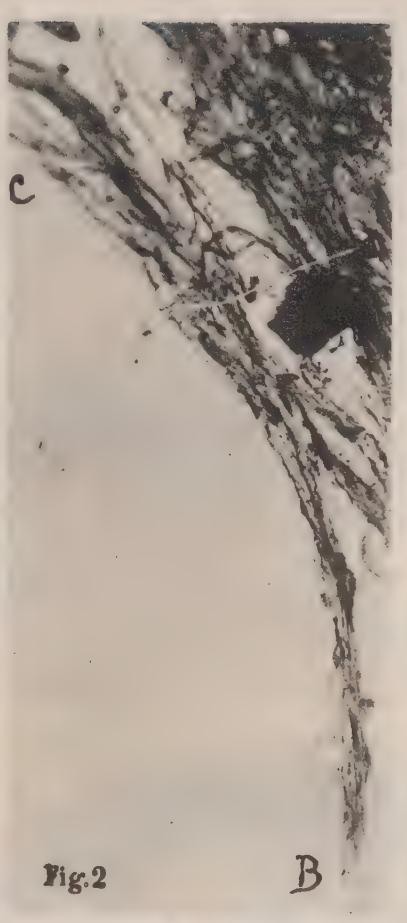

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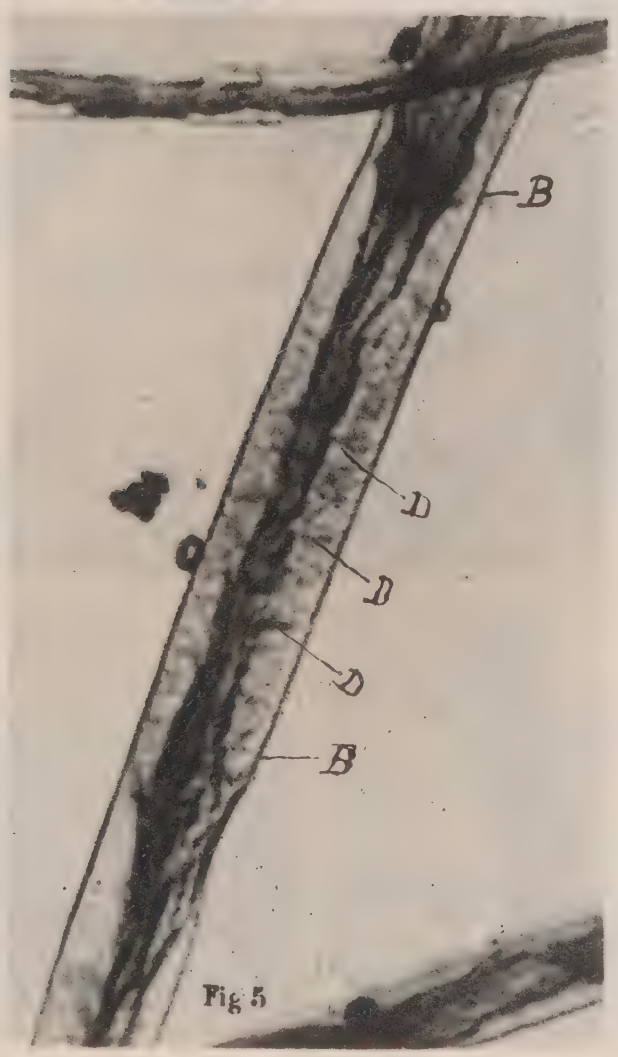
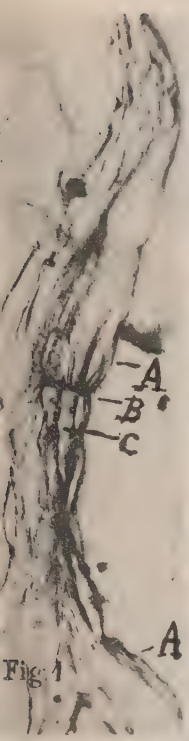


Fig 5

Fig.6



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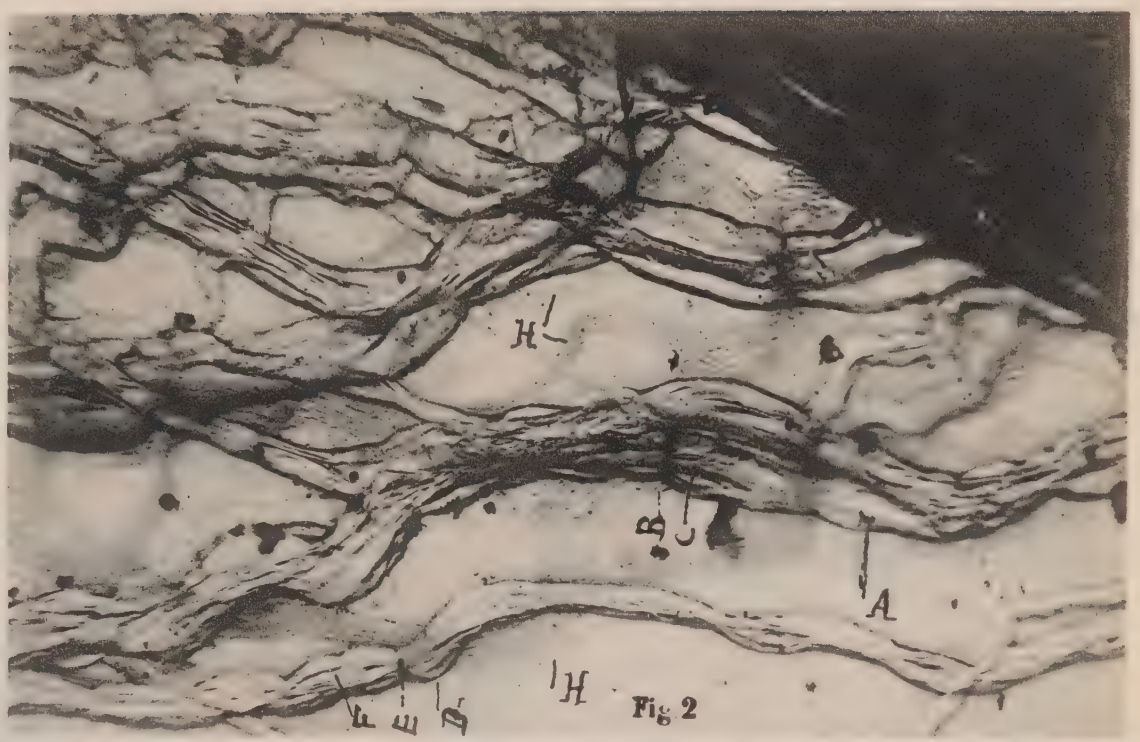

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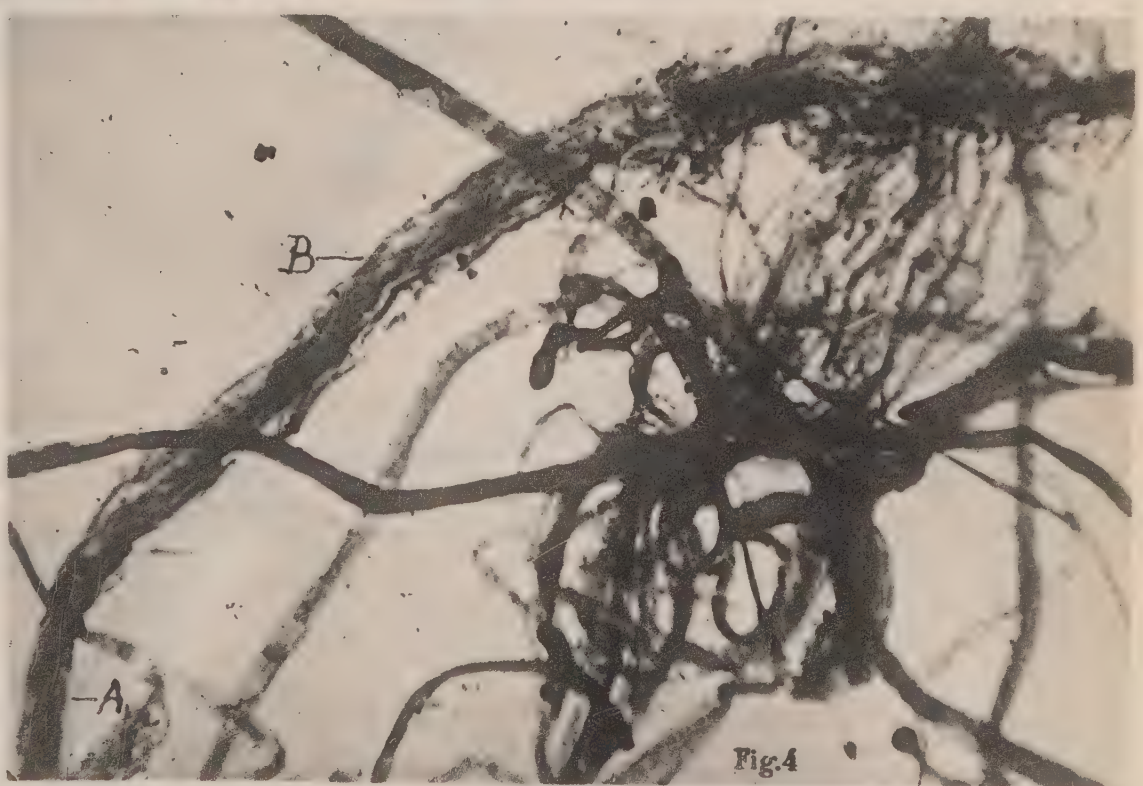

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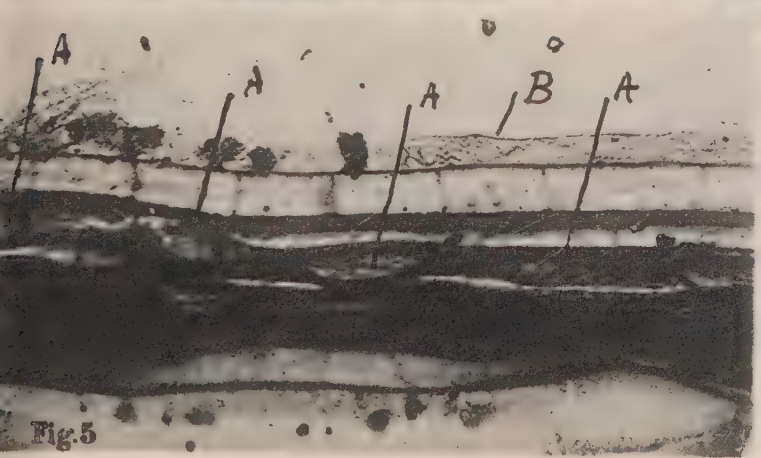

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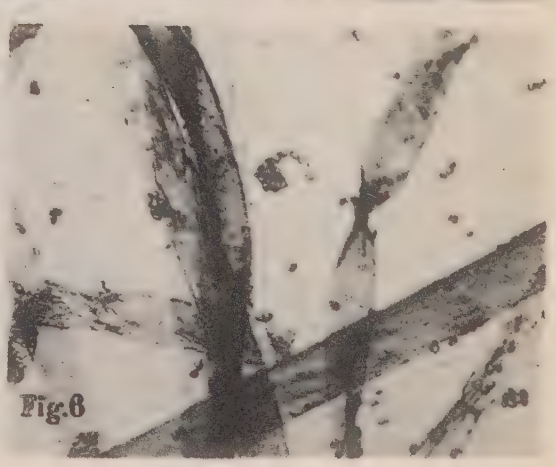
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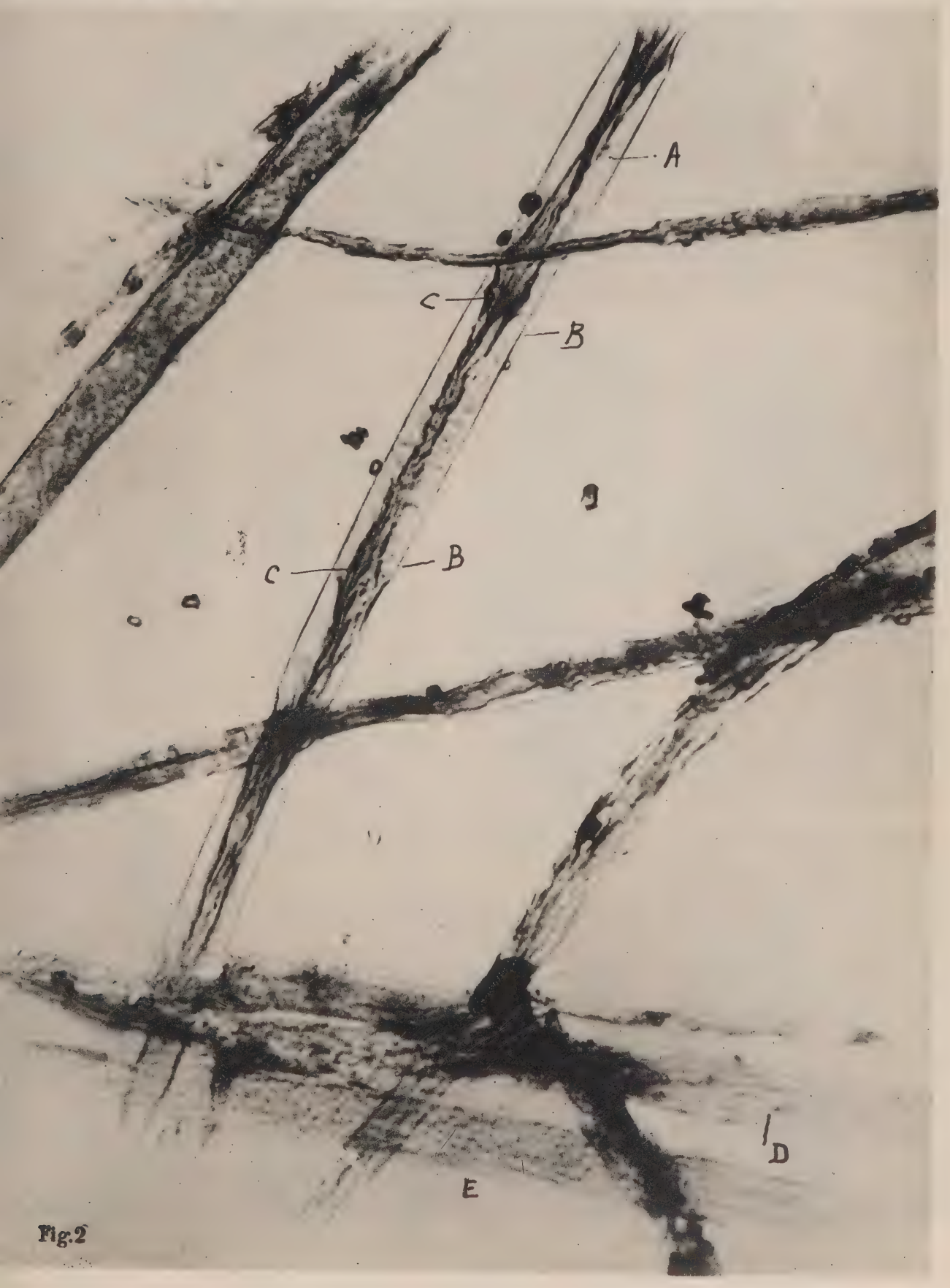

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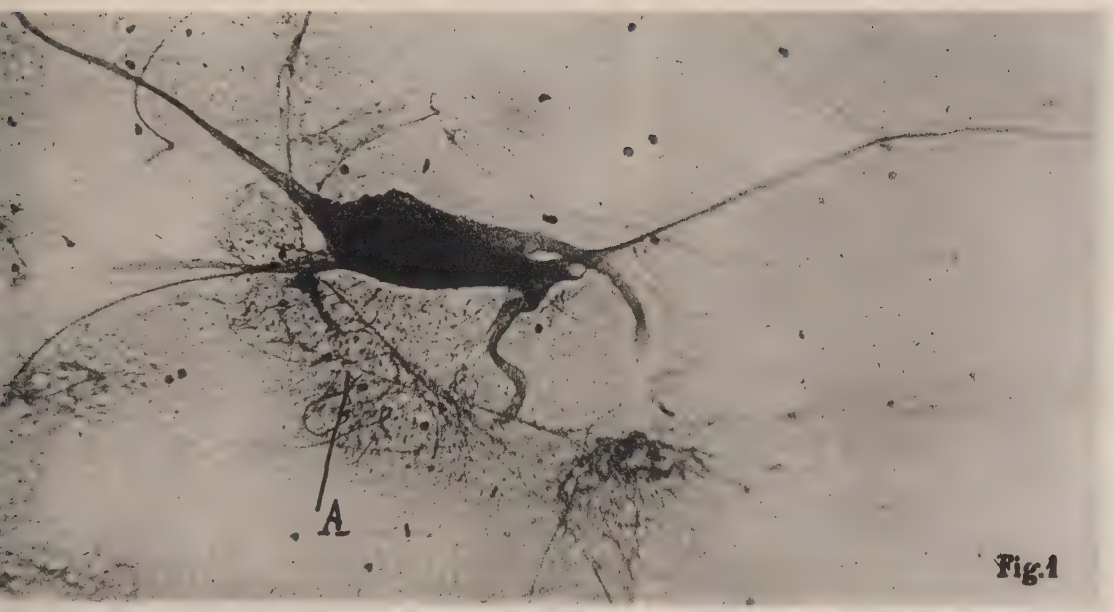

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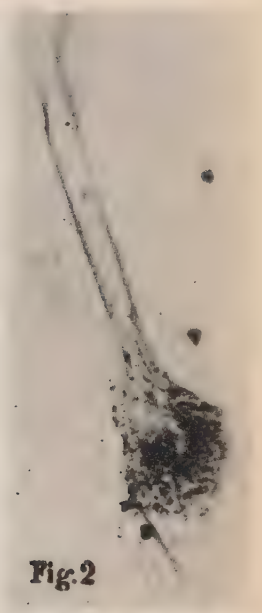

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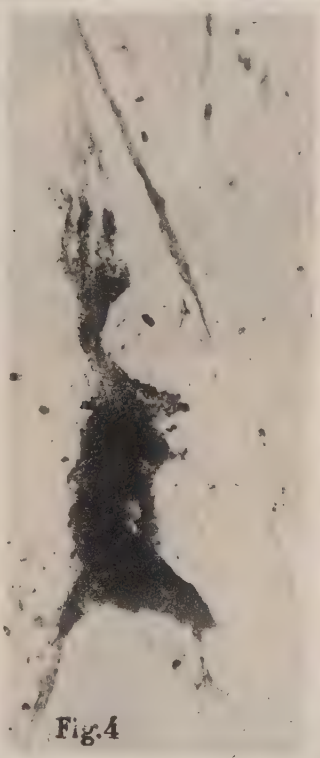

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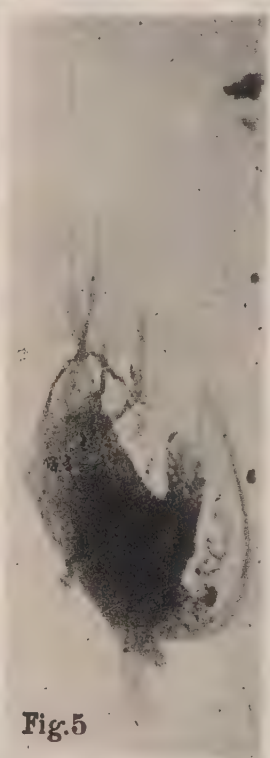

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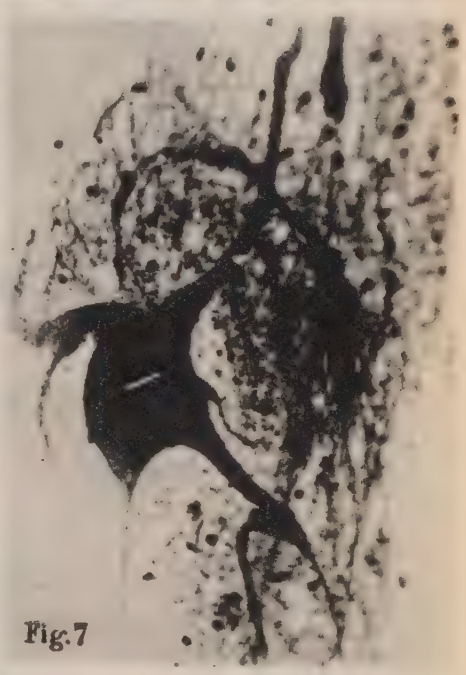

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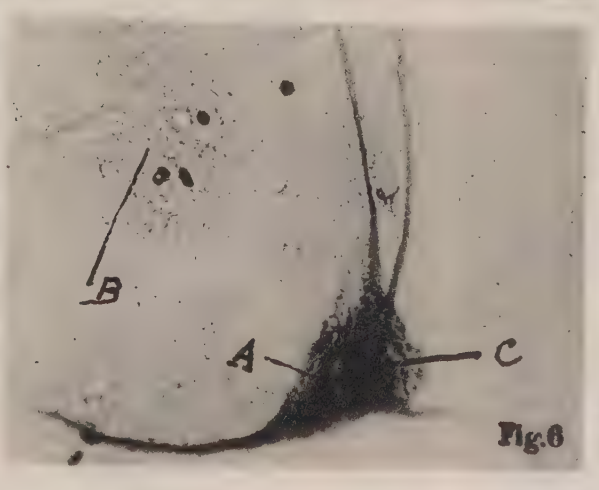

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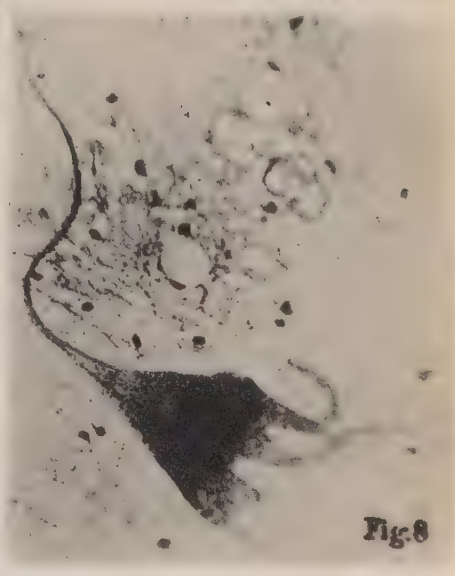

Fig.8

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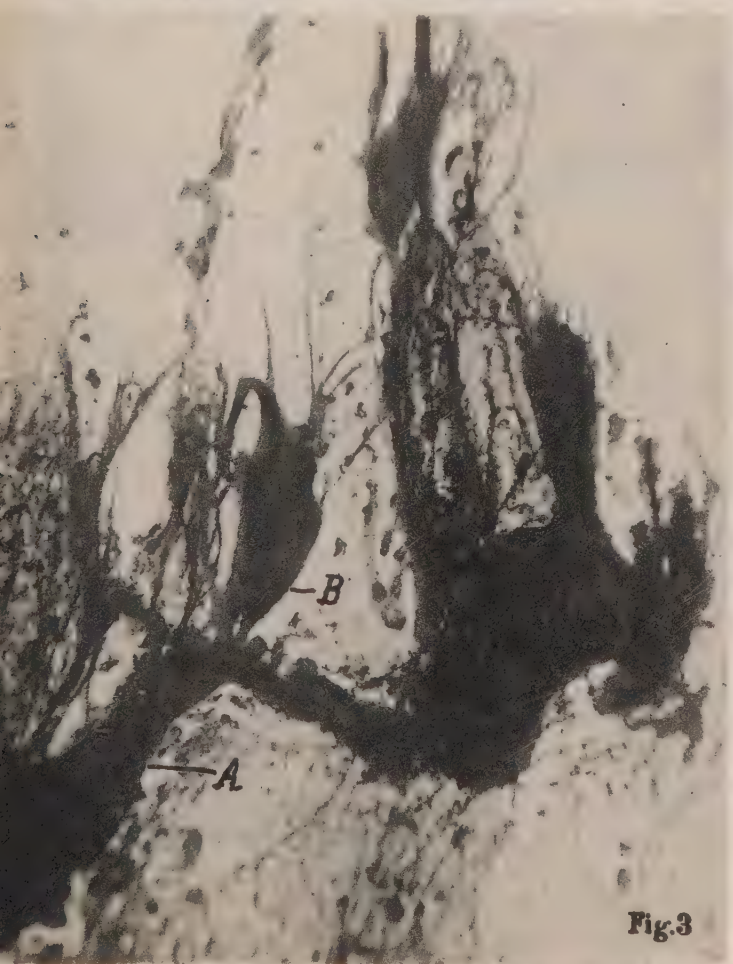


Fig.3

Fig.4

Fig. 1

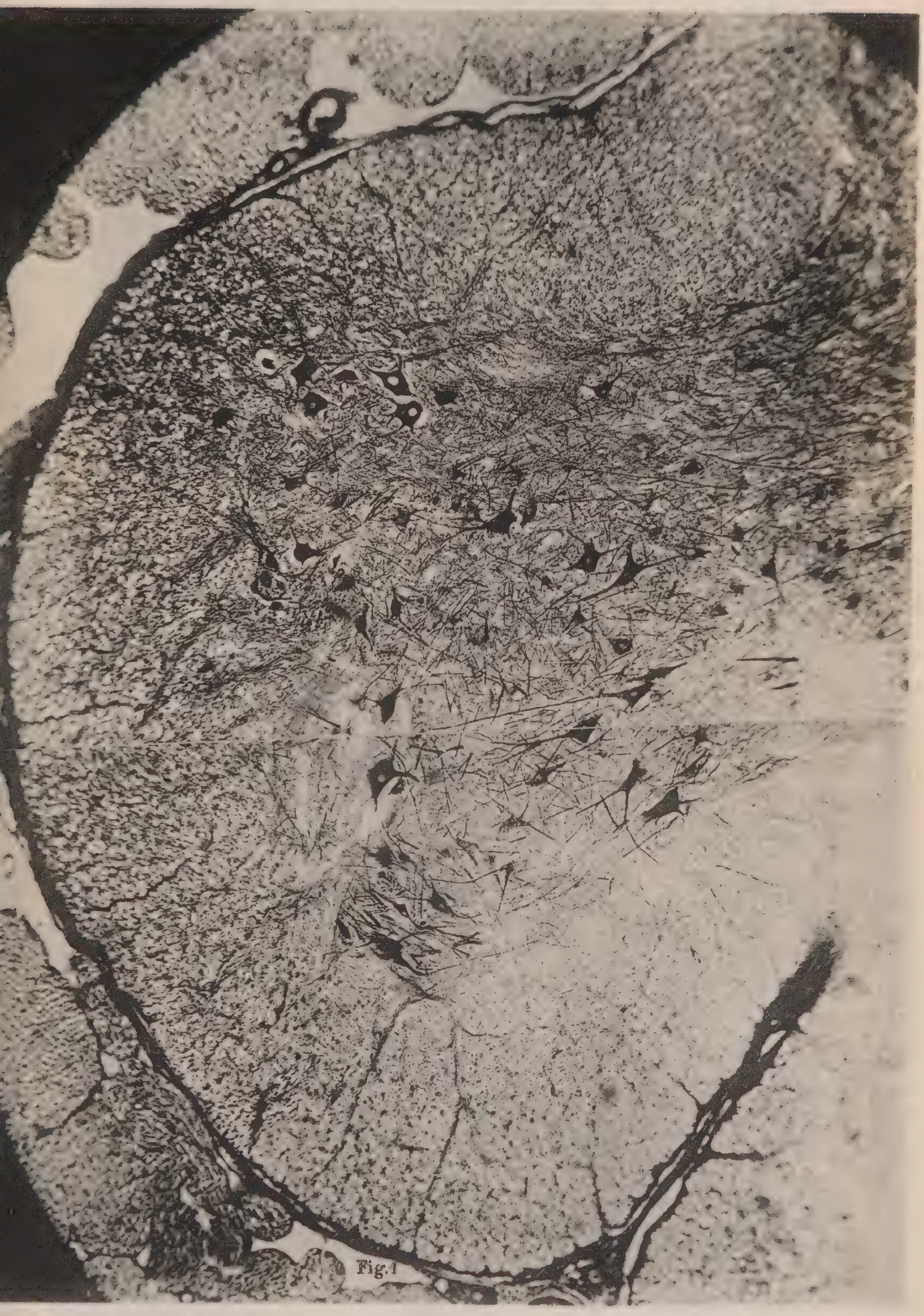
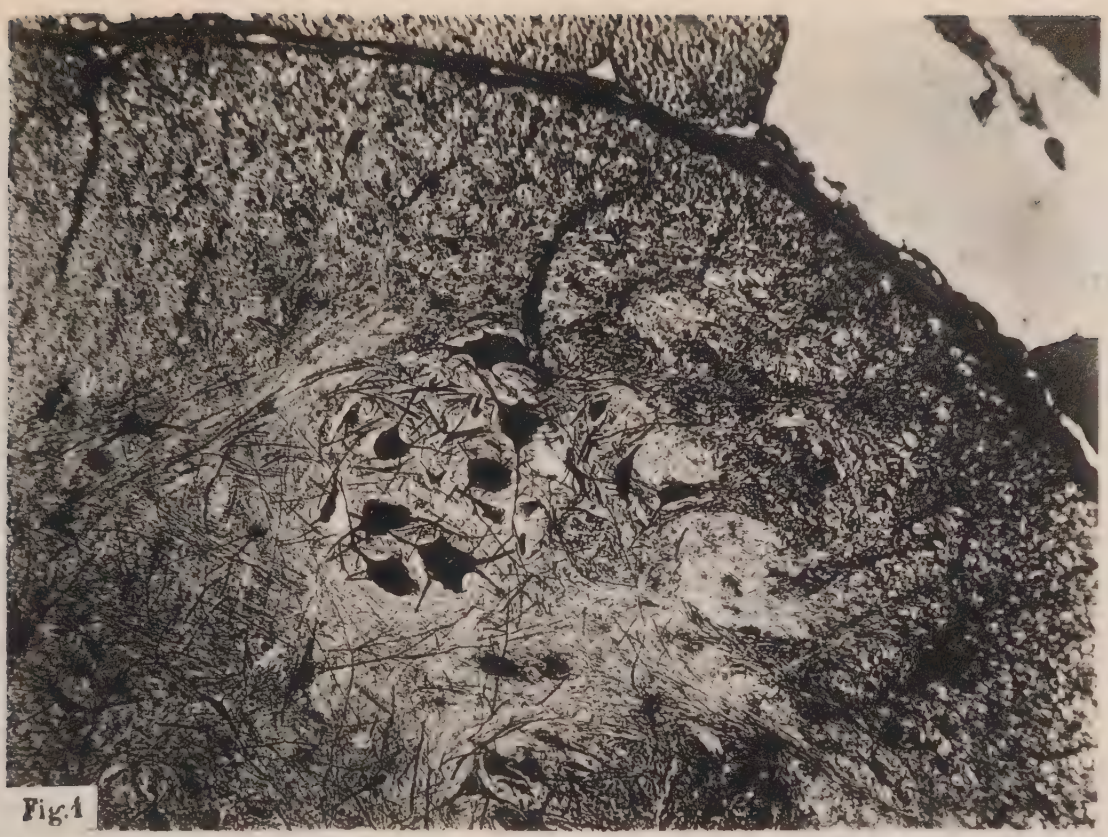


Fig. 1



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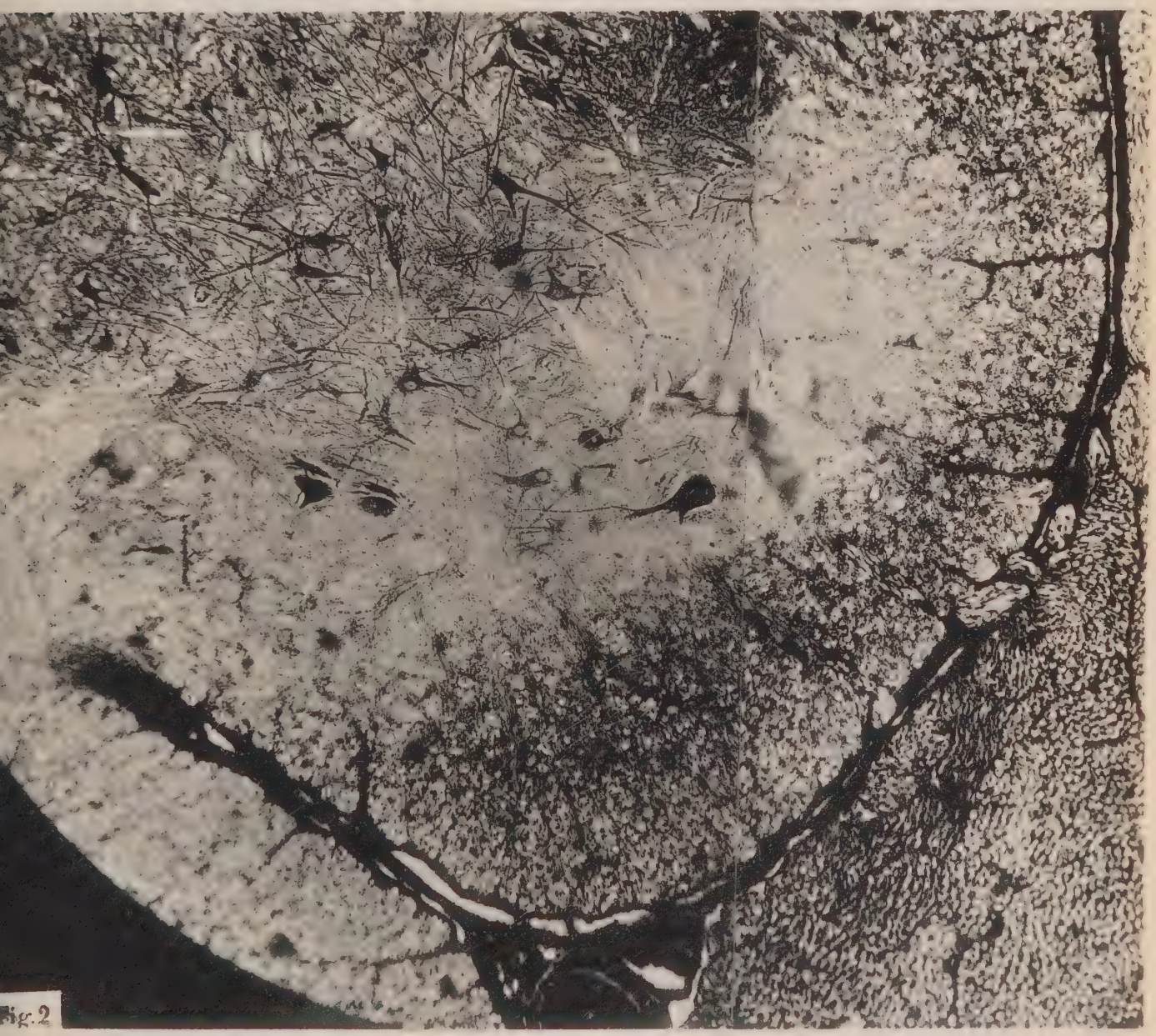

Fig.2

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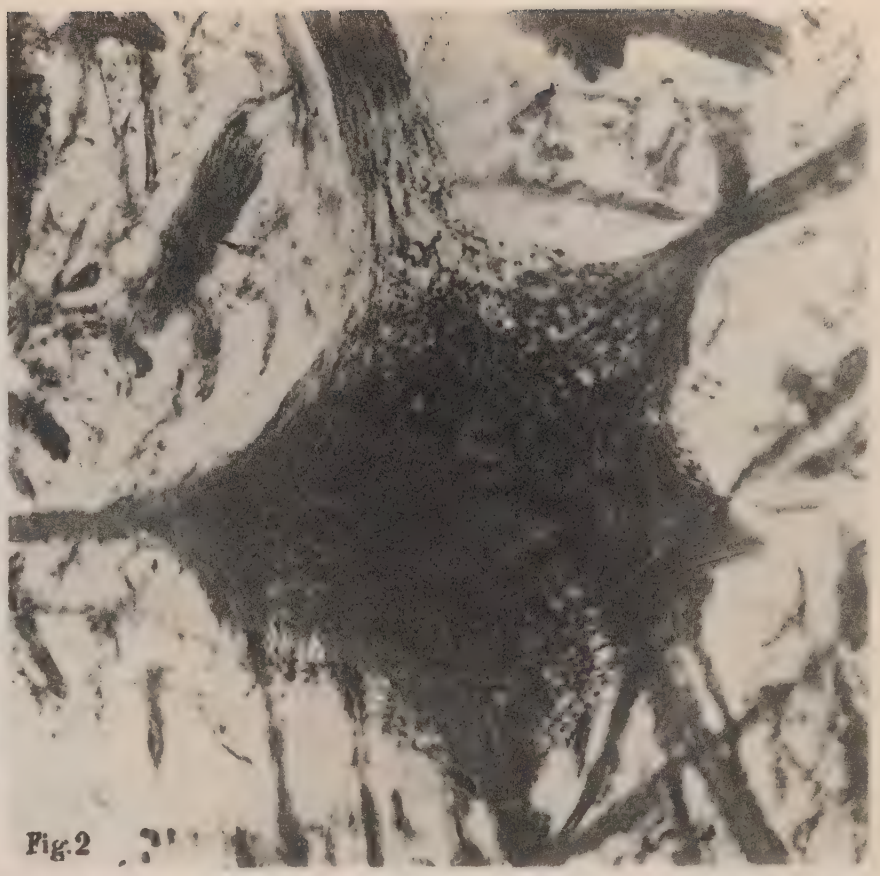

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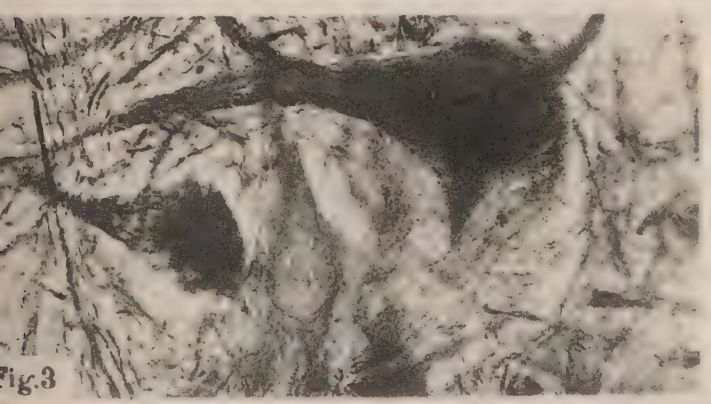

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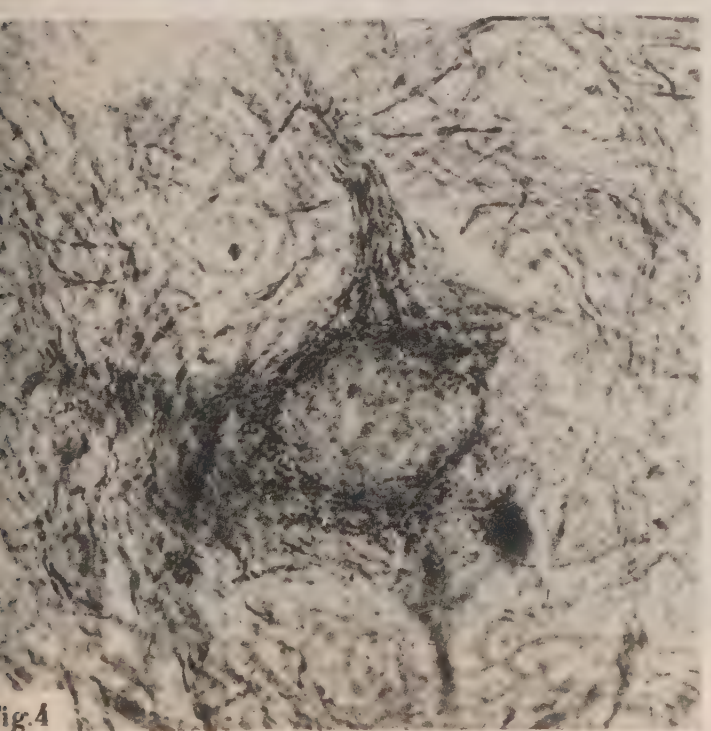

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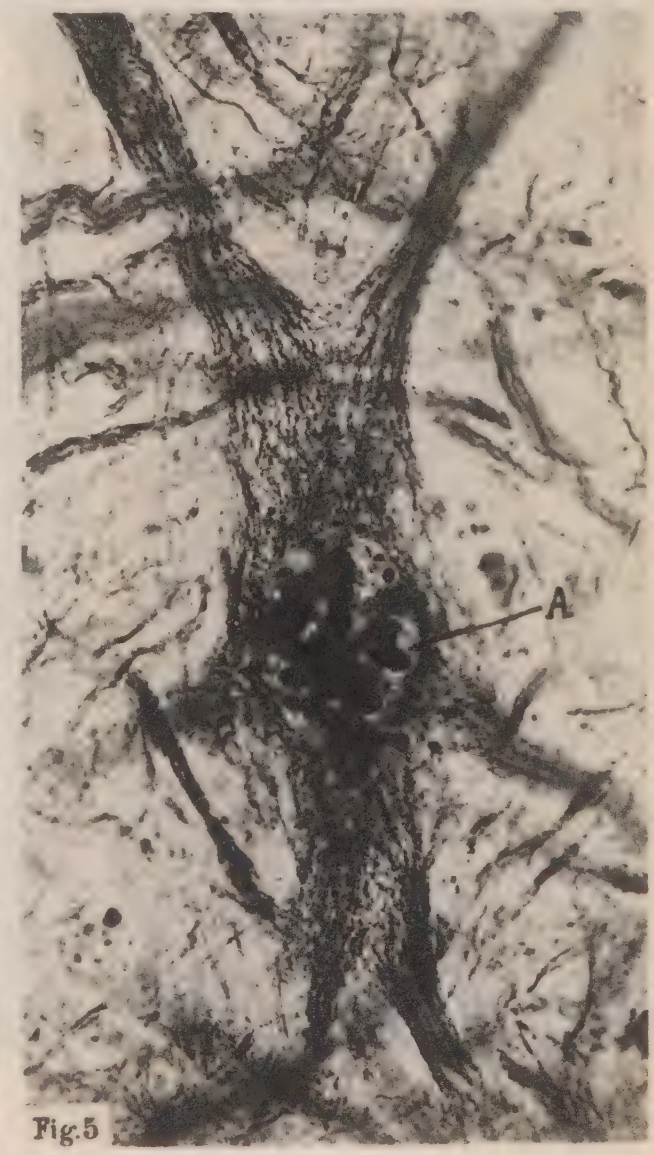

Fig.5

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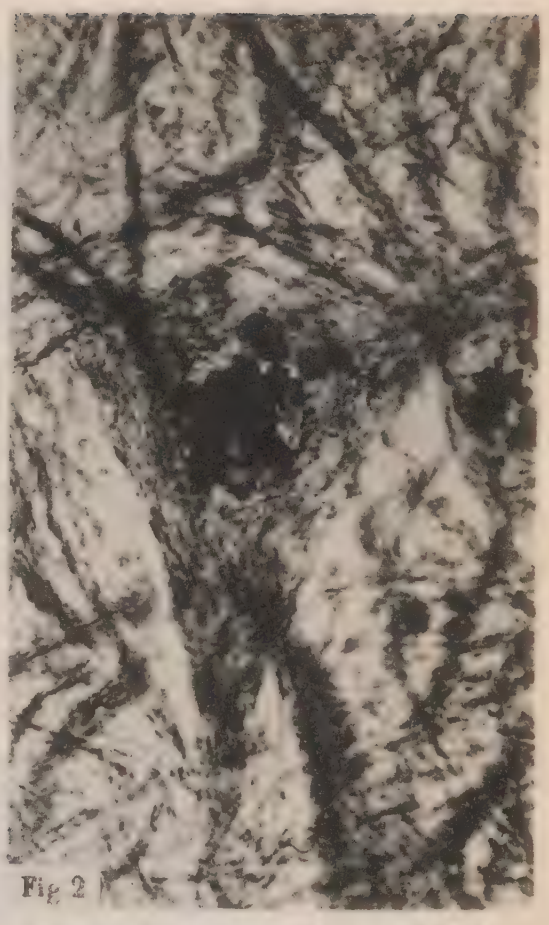

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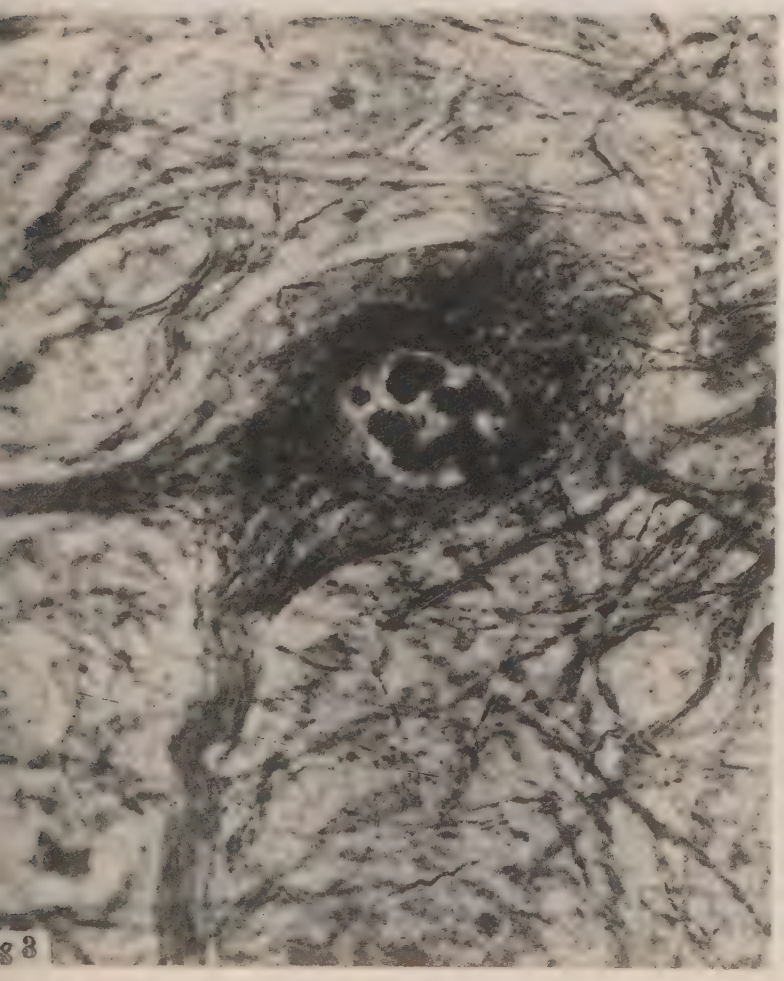
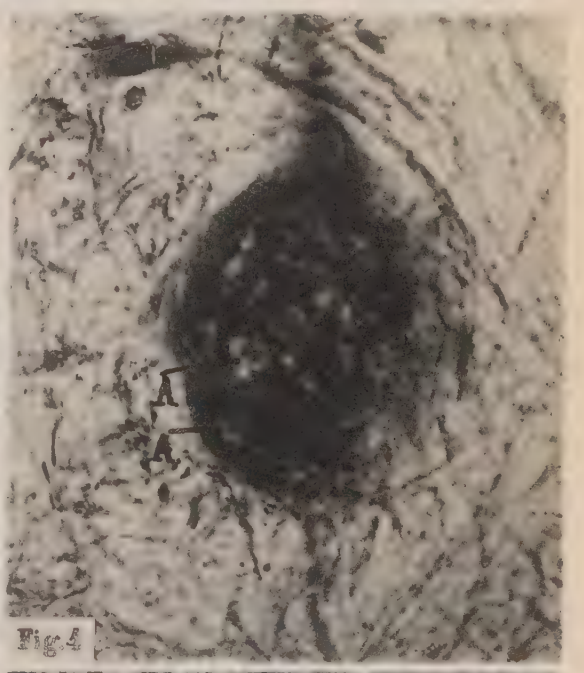


g 3



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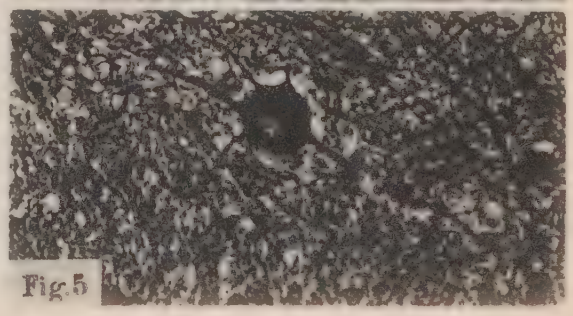

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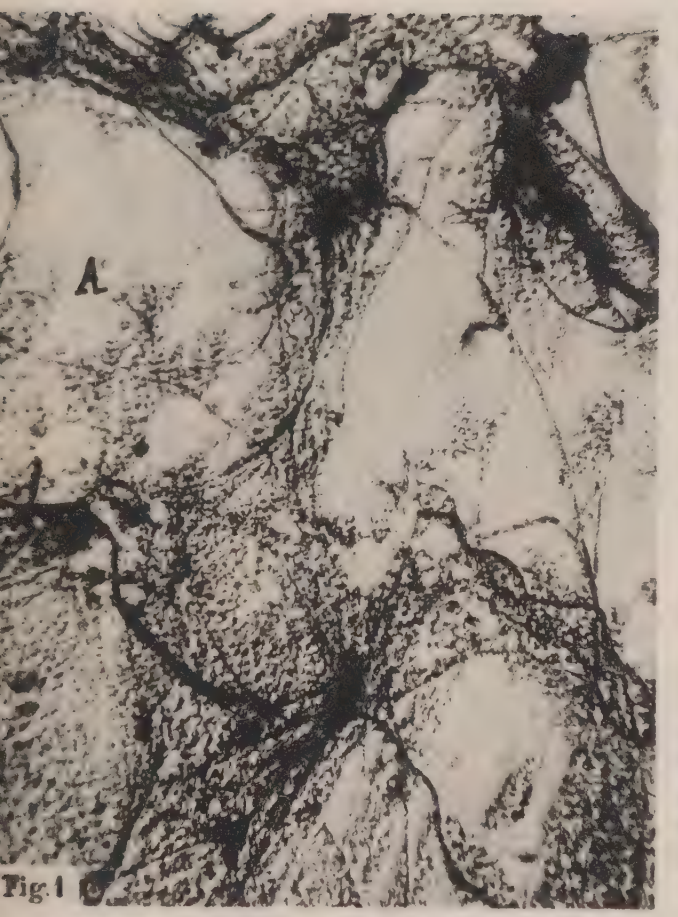

Fig.1

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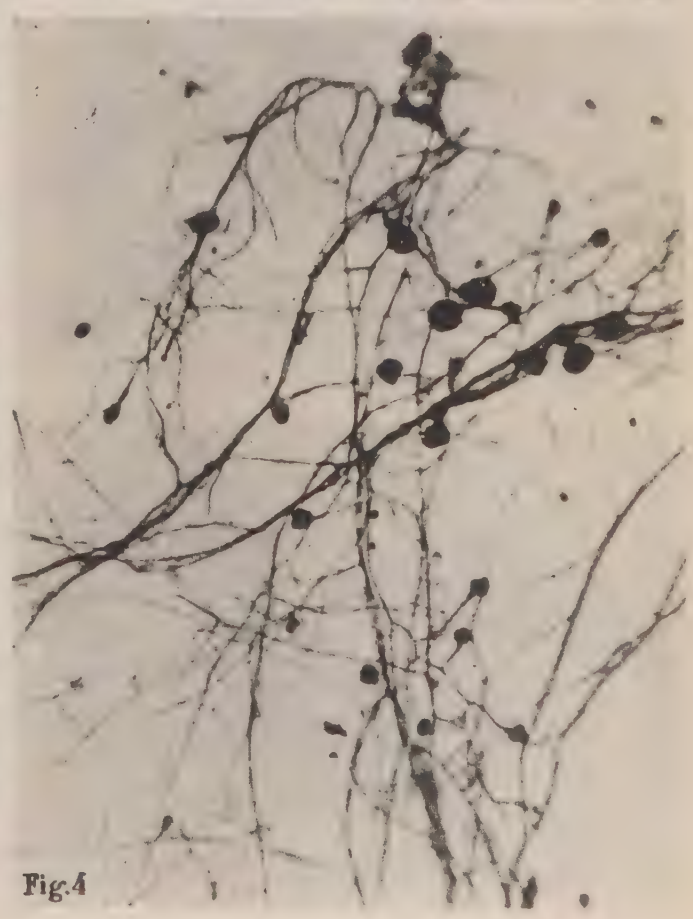

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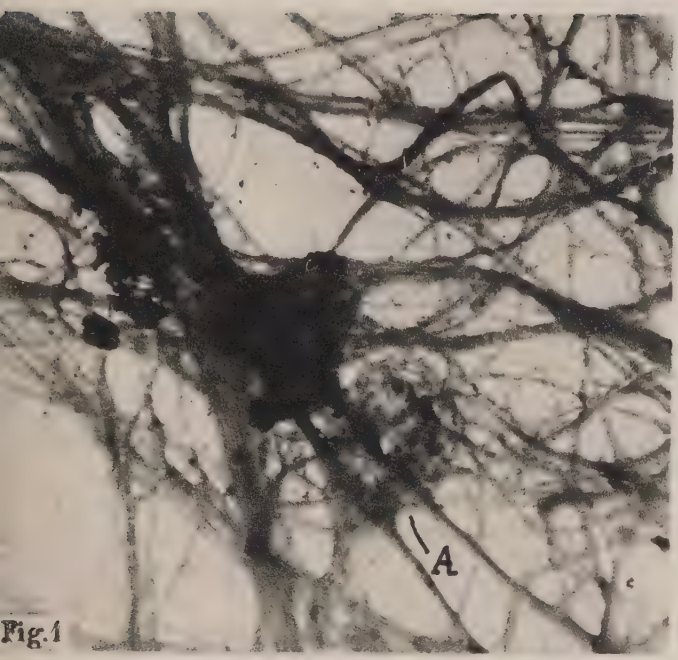

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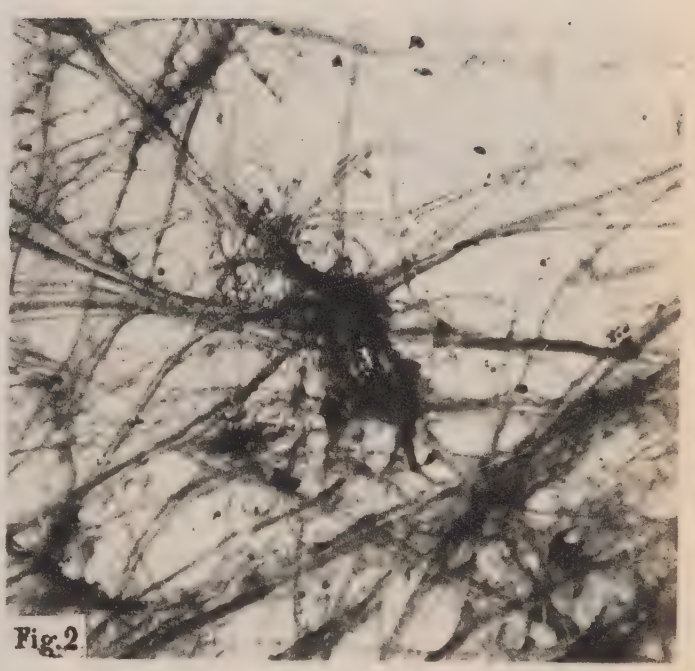

Fig.2

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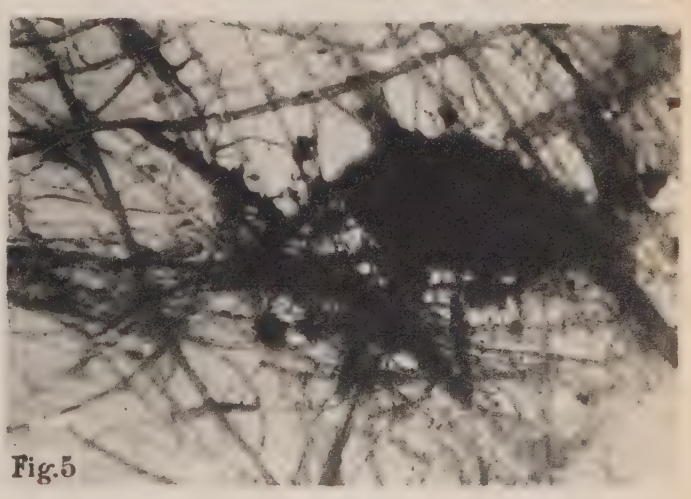

Fig.5

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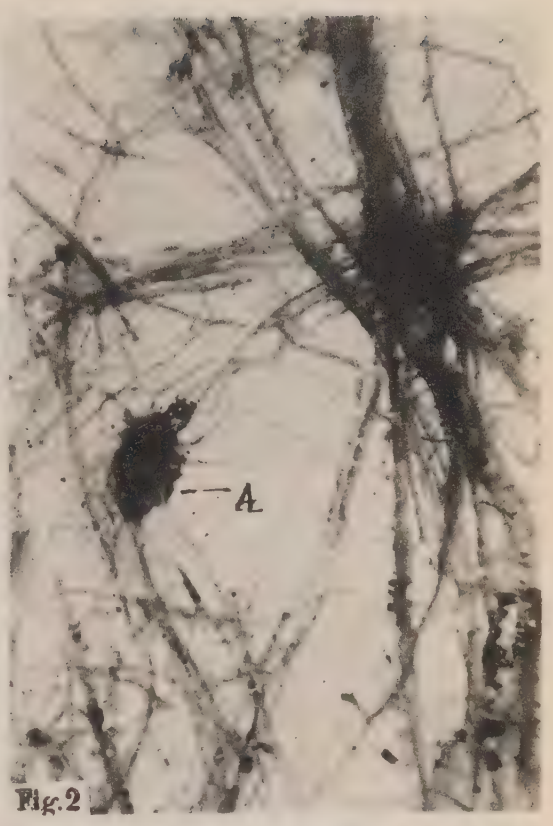

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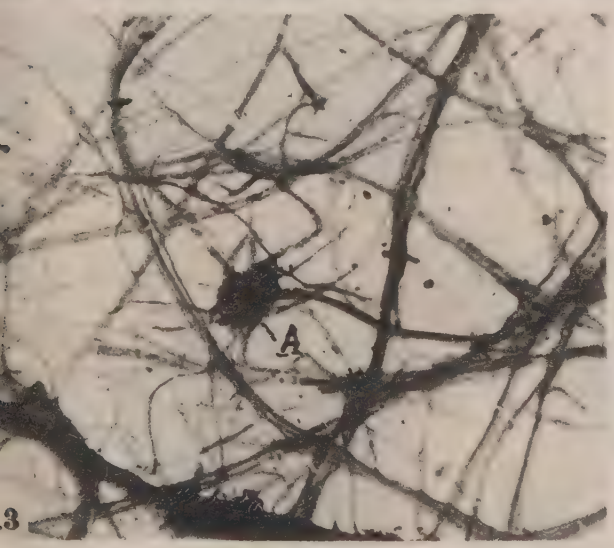

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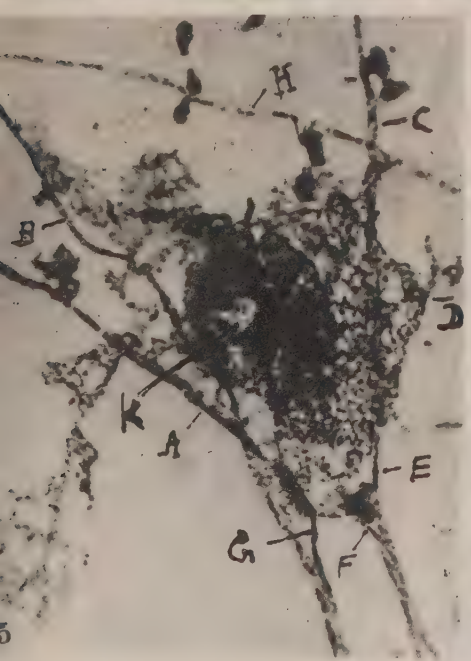

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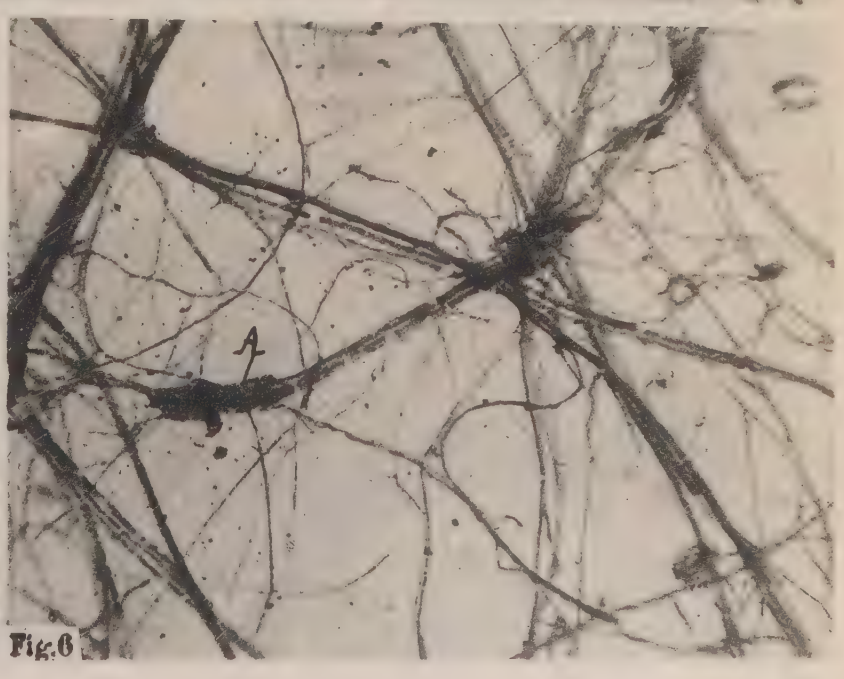

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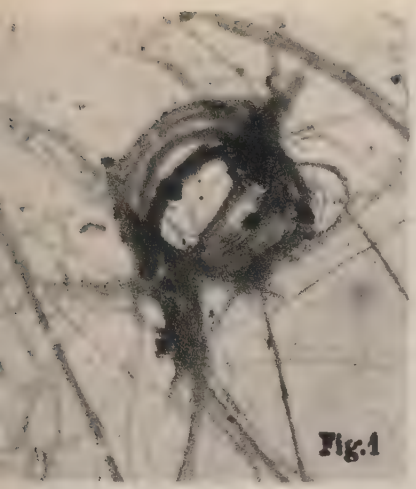

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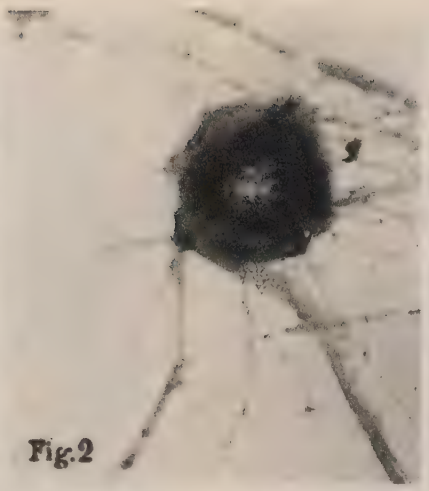

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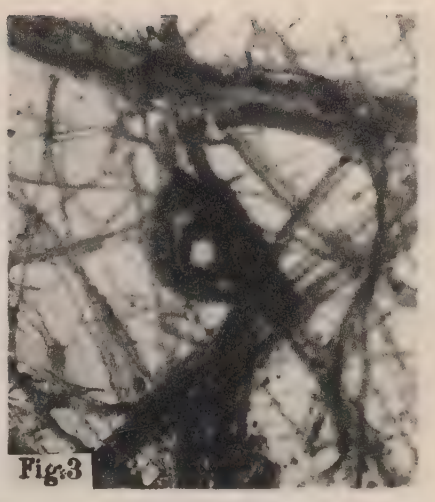

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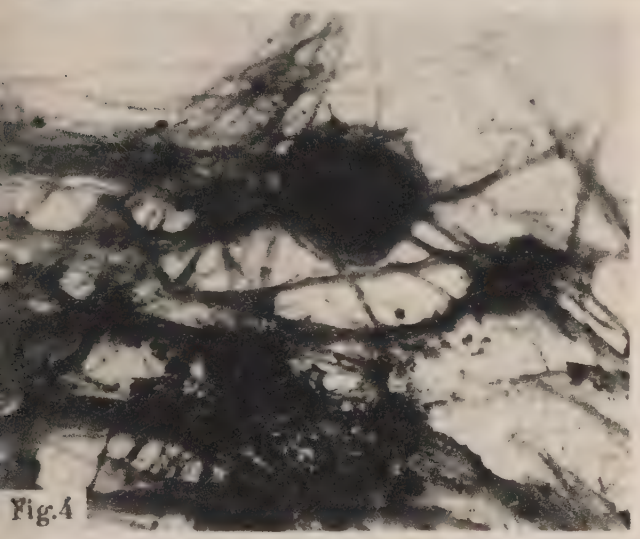
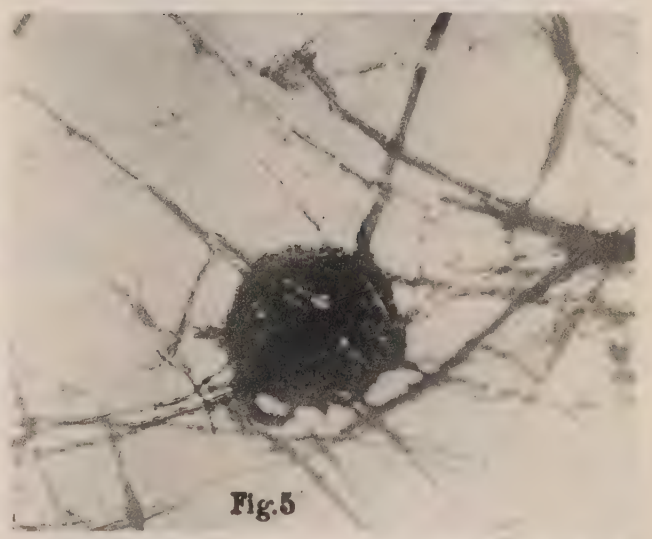


Fig.4



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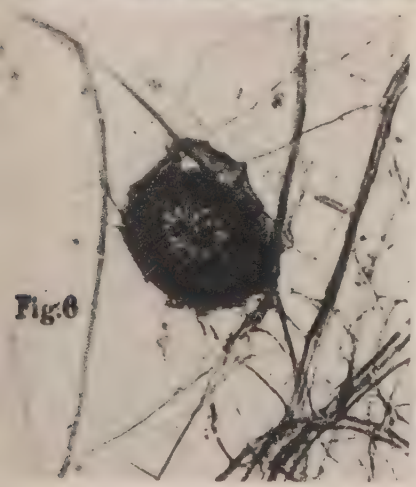
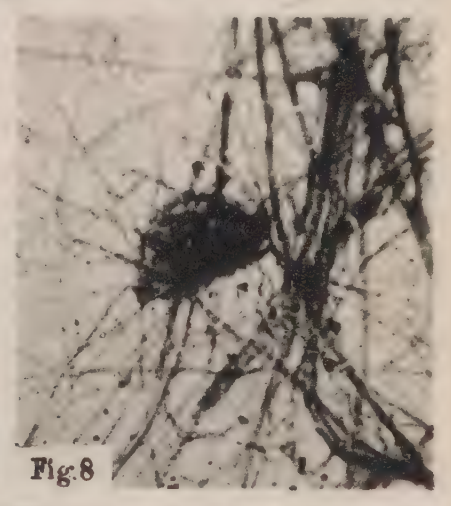


Fig.6

Fig.7



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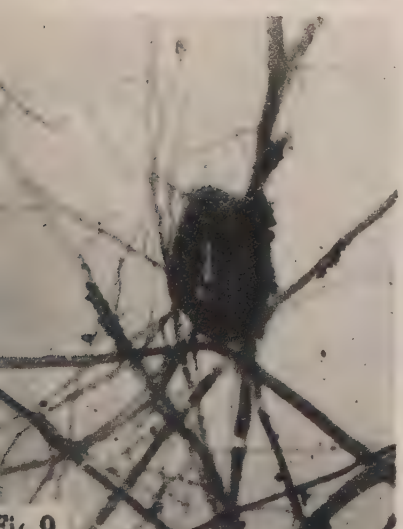

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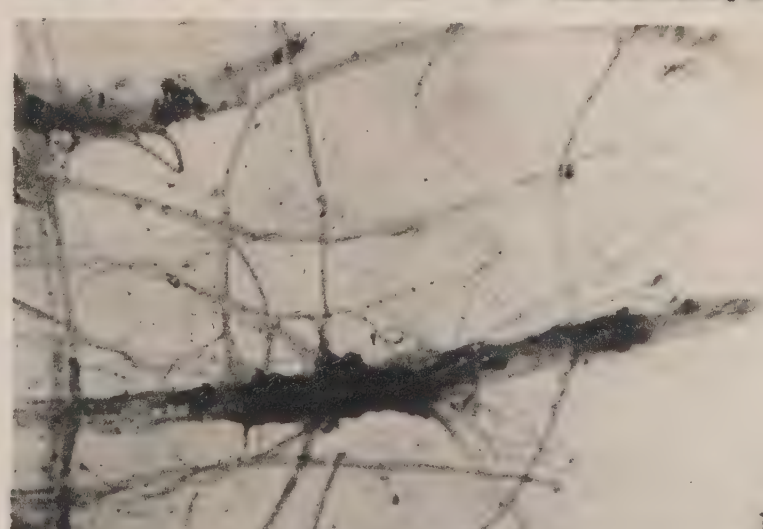

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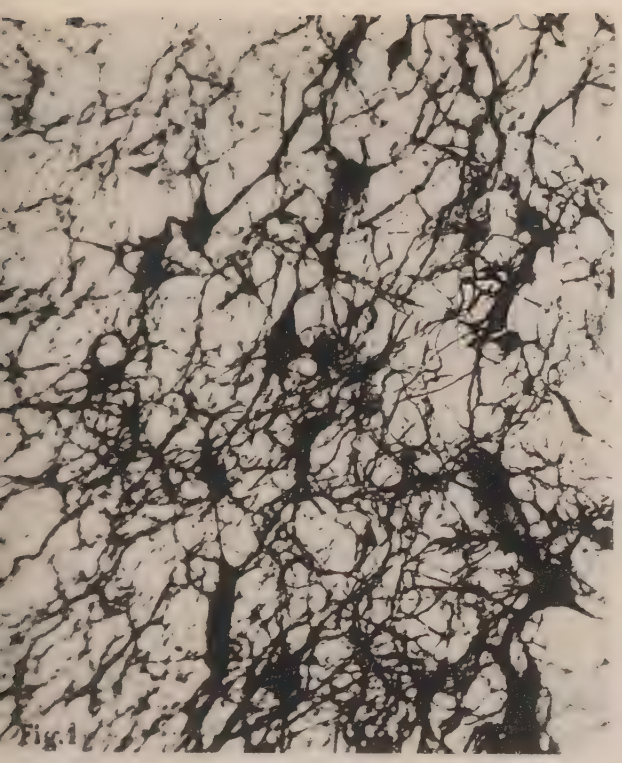
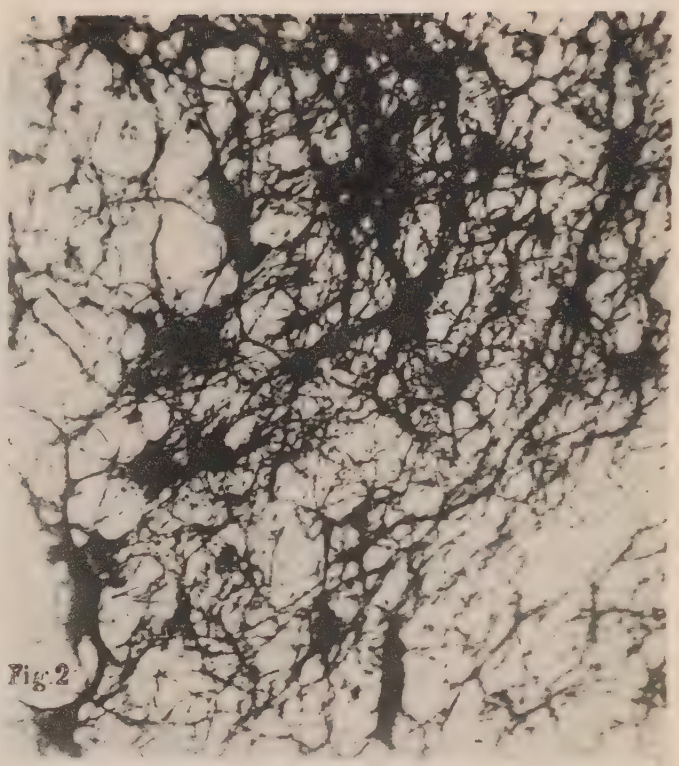


Fig. 1



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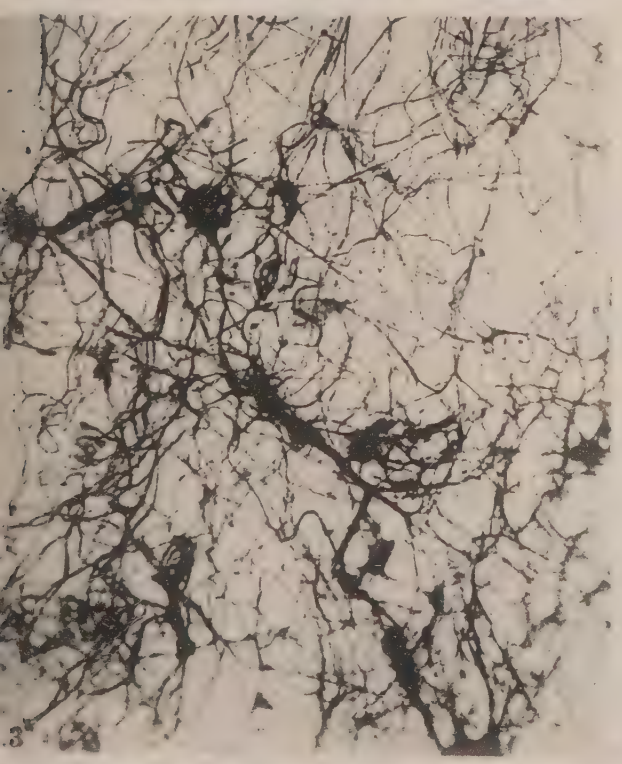

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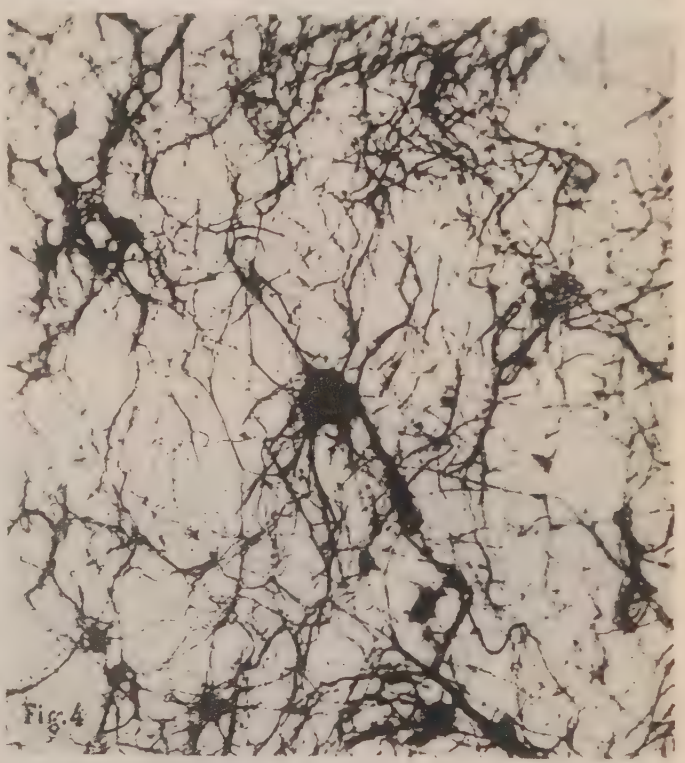


Fig. 4

Fig. 5

Fig. 6

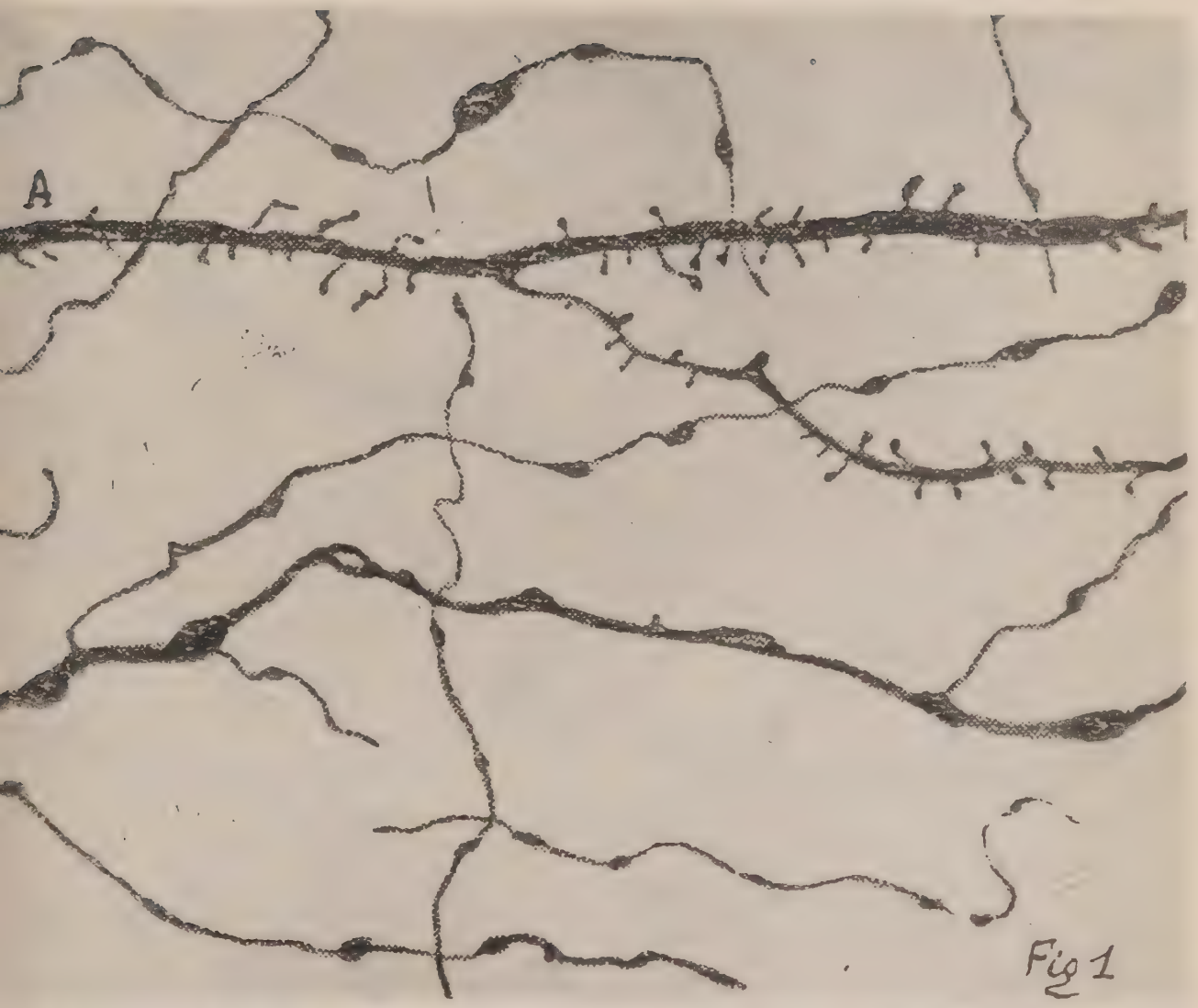
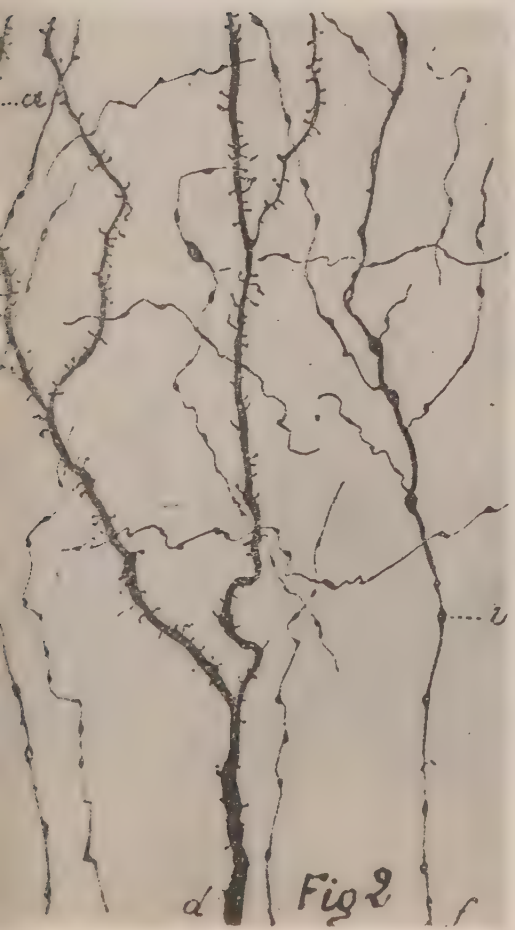
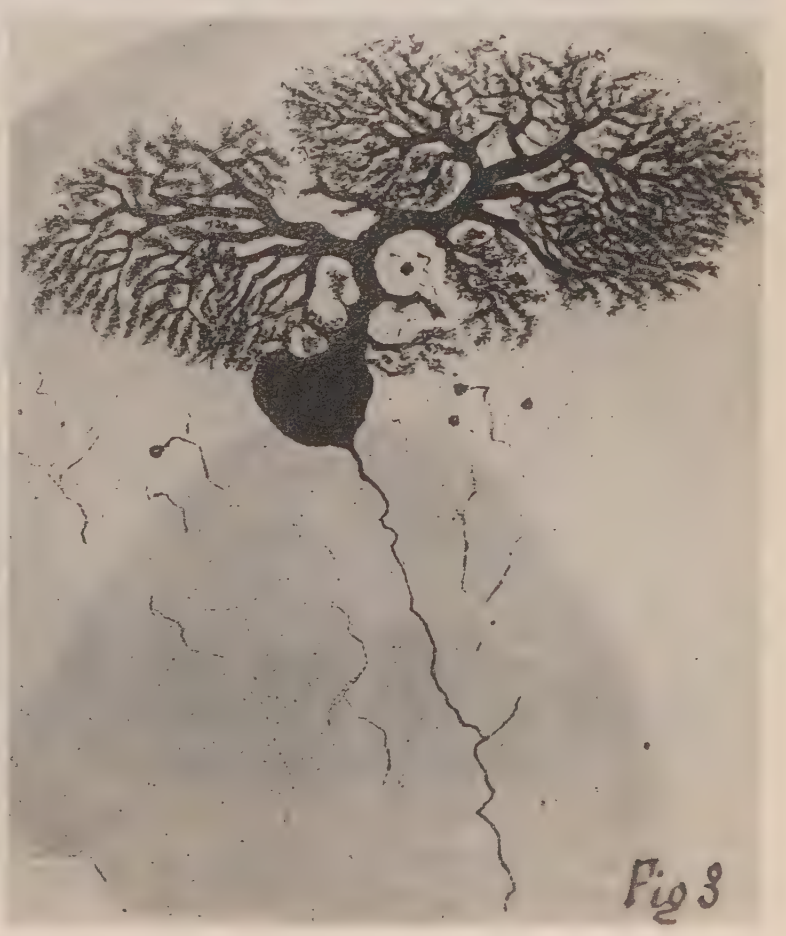


Fig 1





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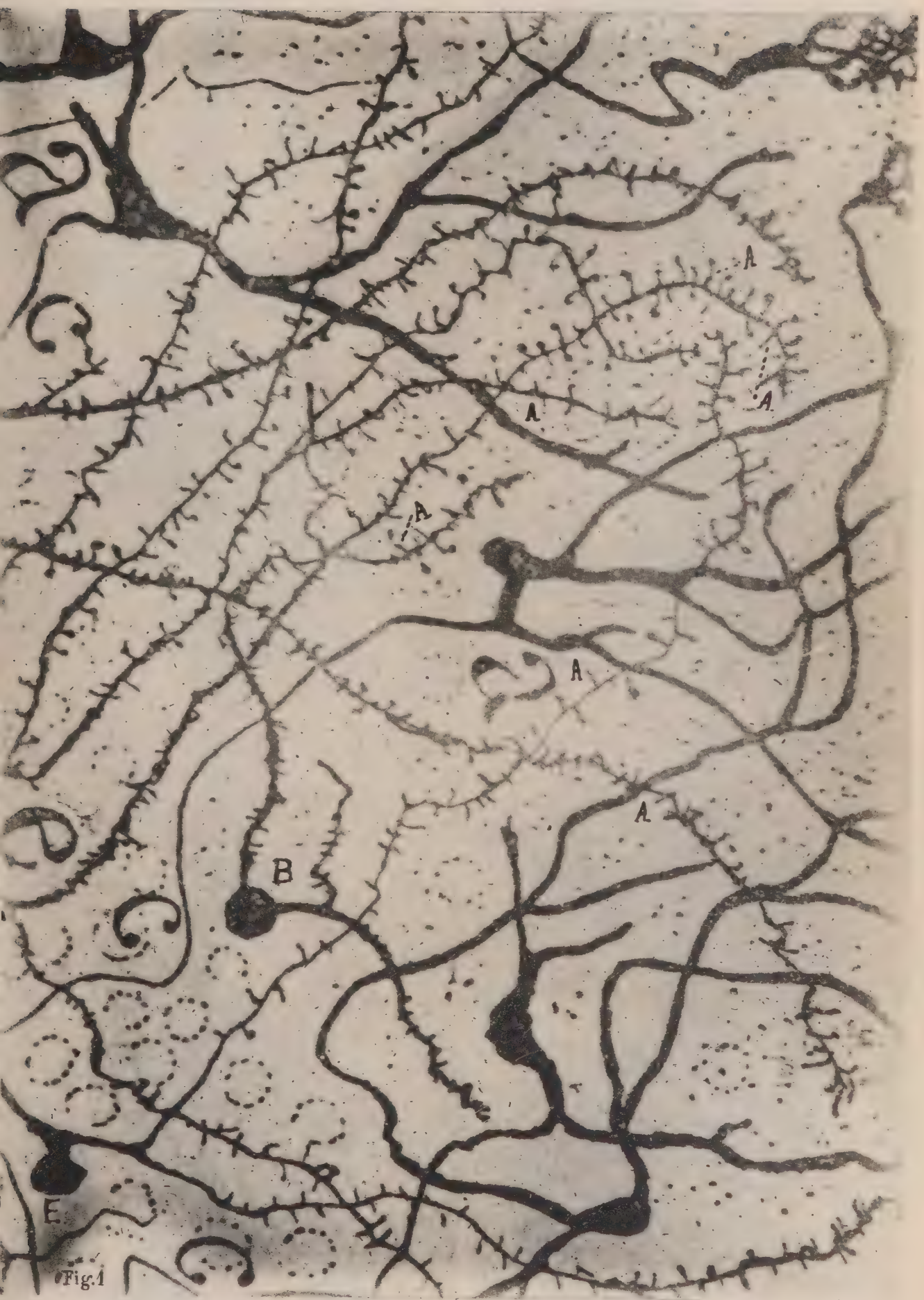

Fig.1

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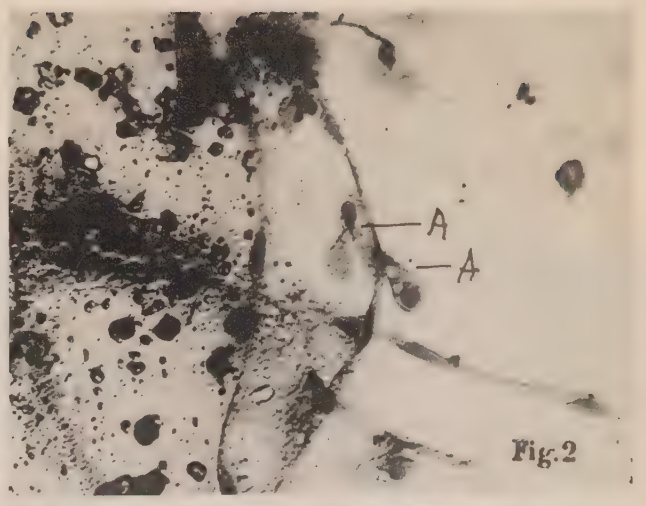


Fig.2

Fig.3

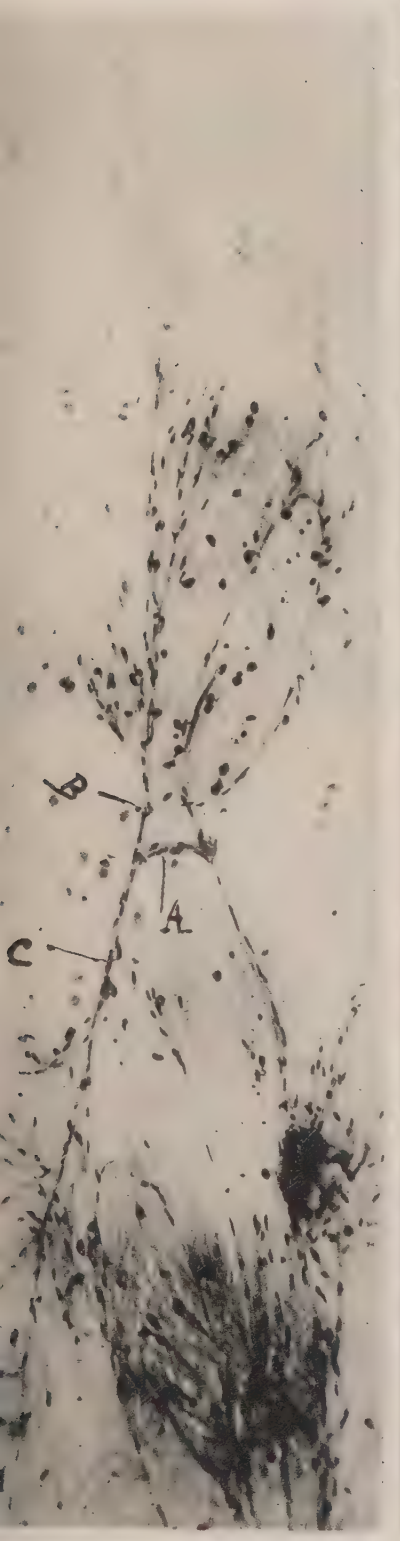


Fig.2

Fig.3

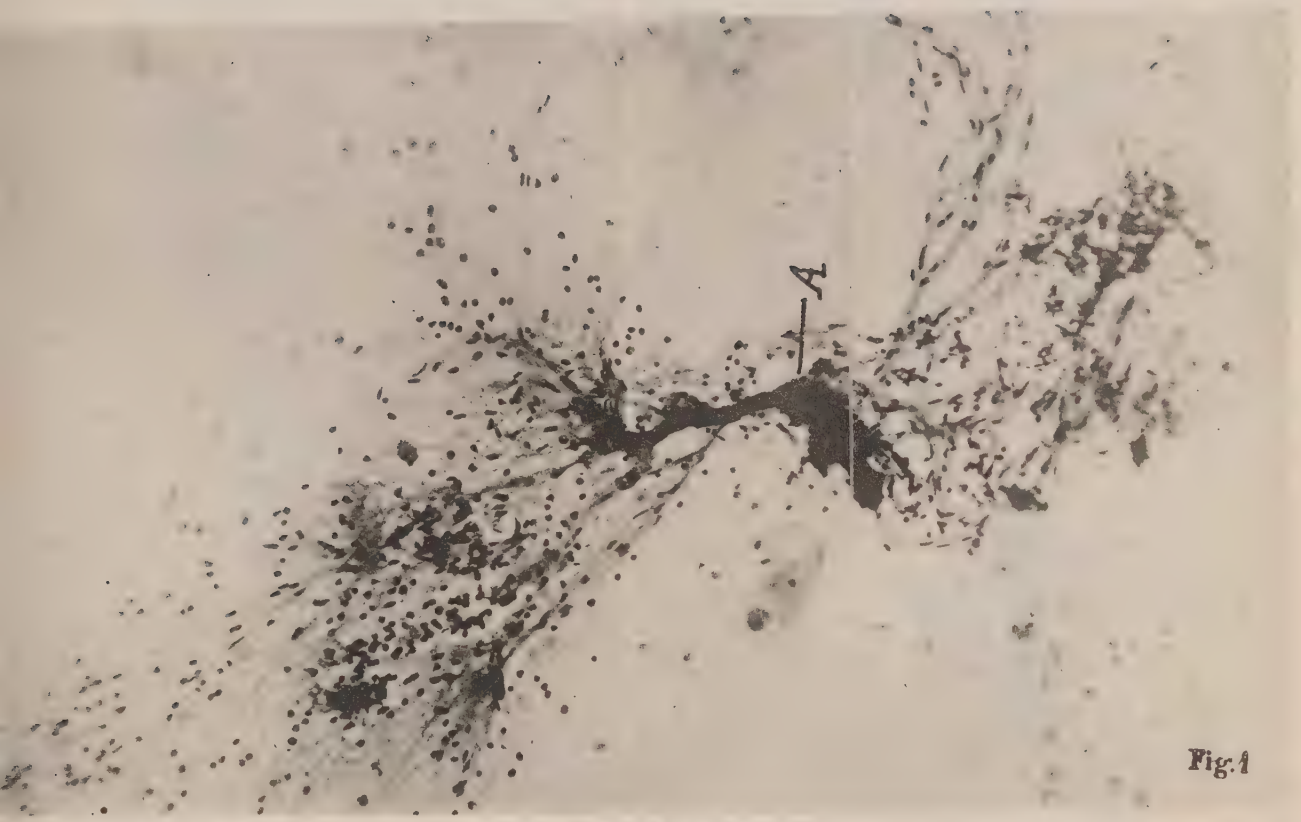
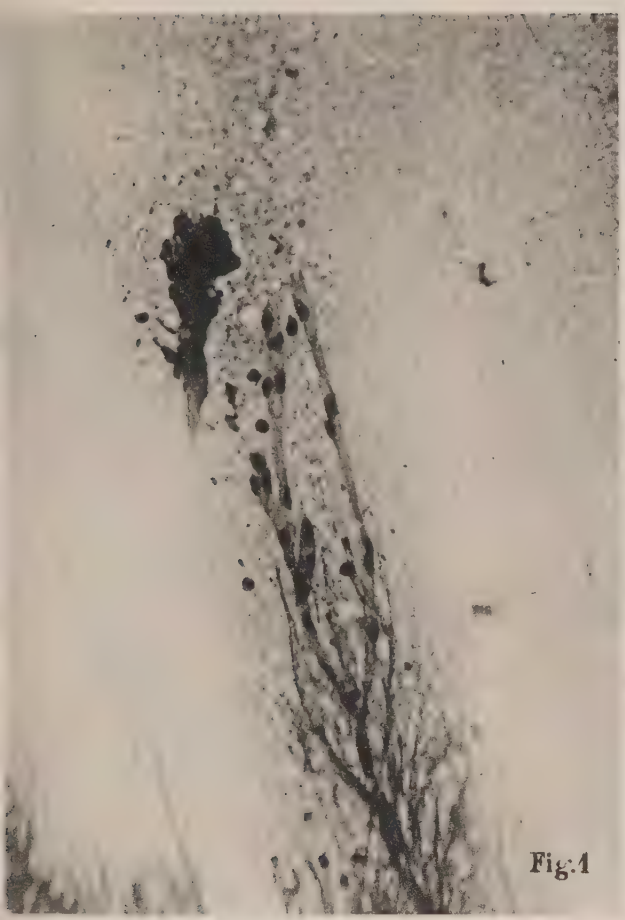


Fig.1

g.2

Fig.3



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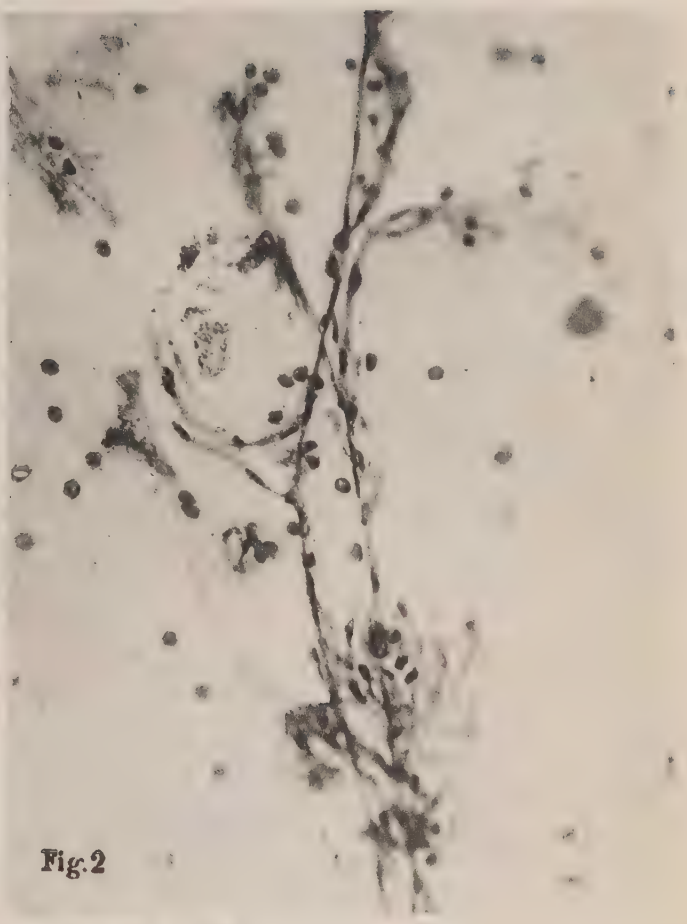
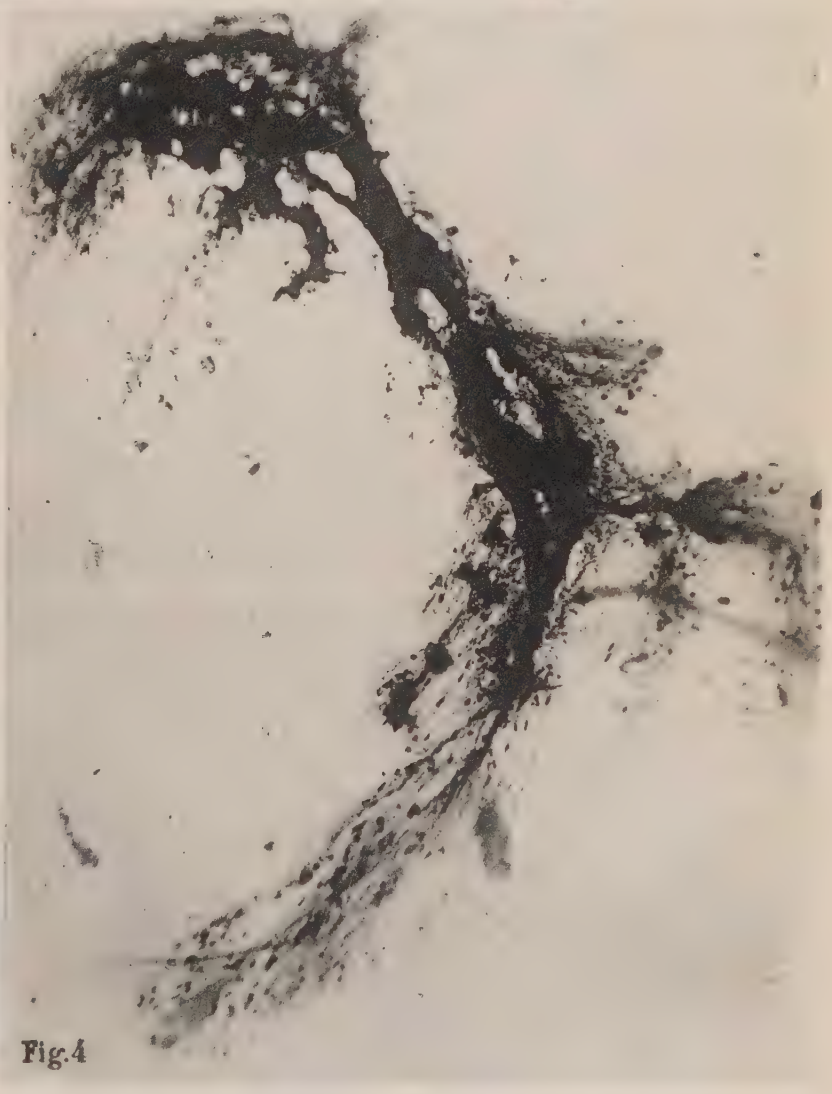


Fig.2

Fig.3



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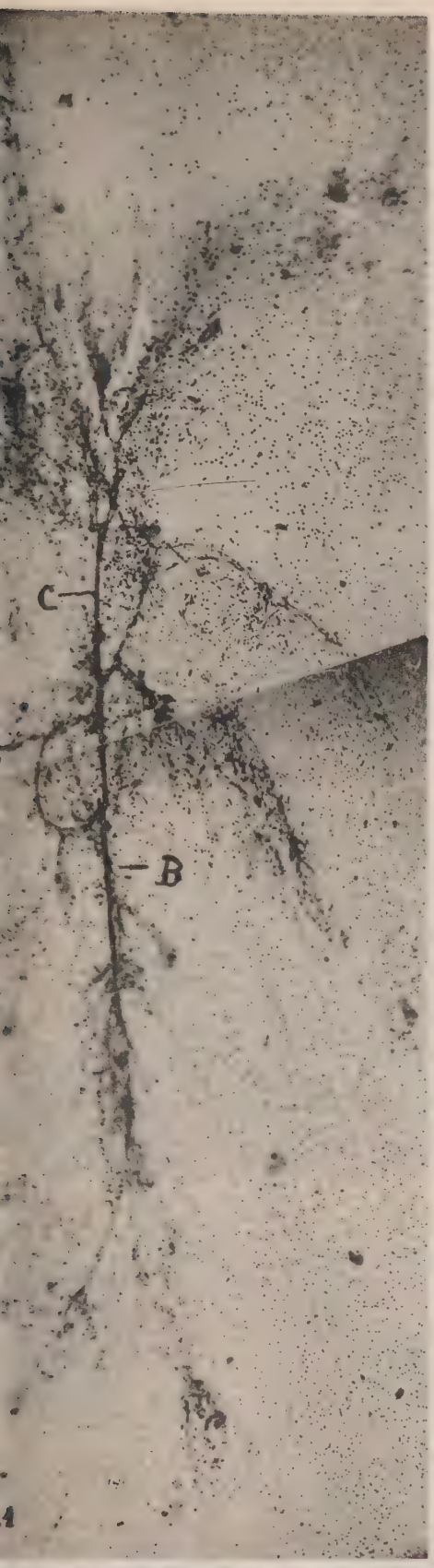

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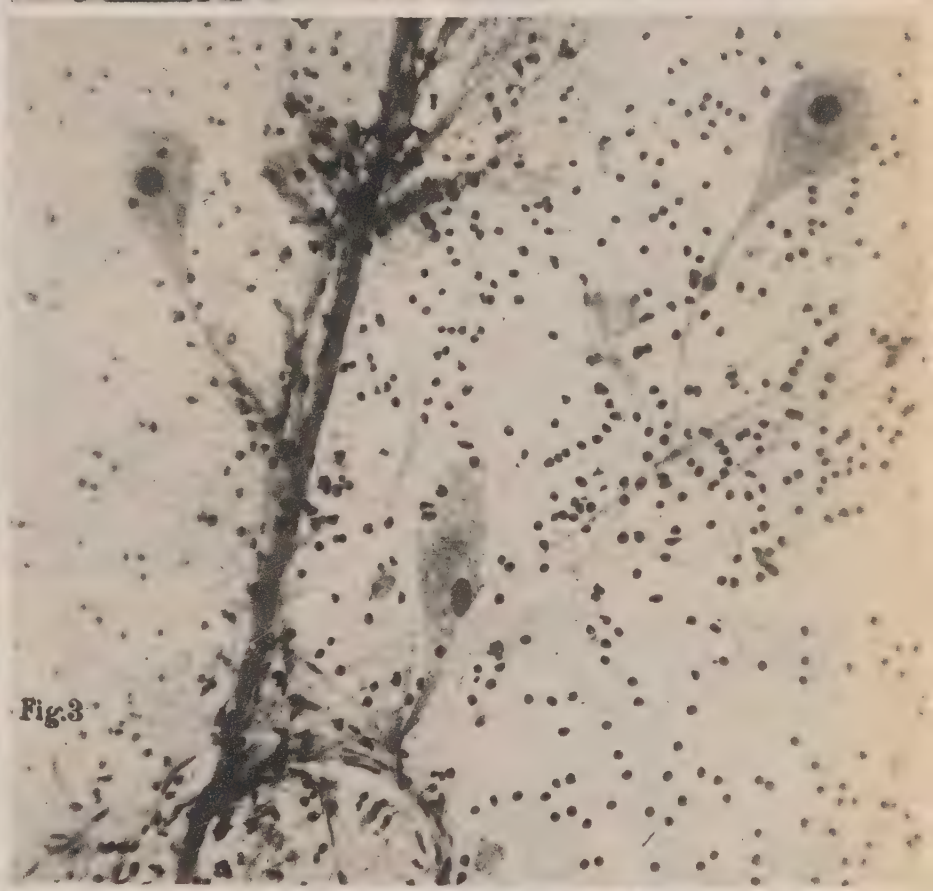
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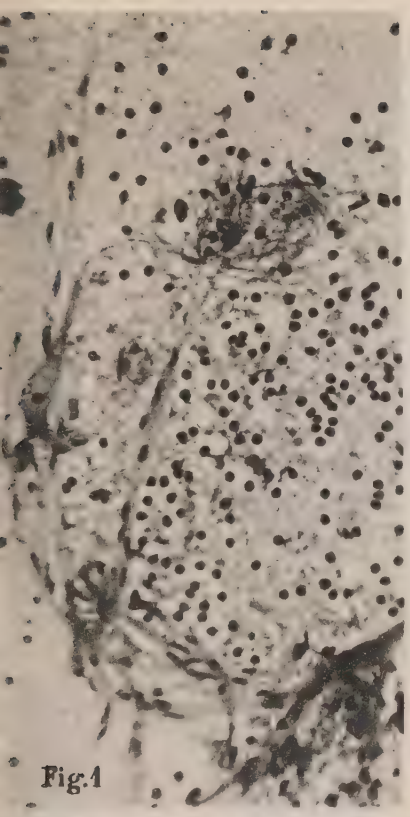

Fig.1

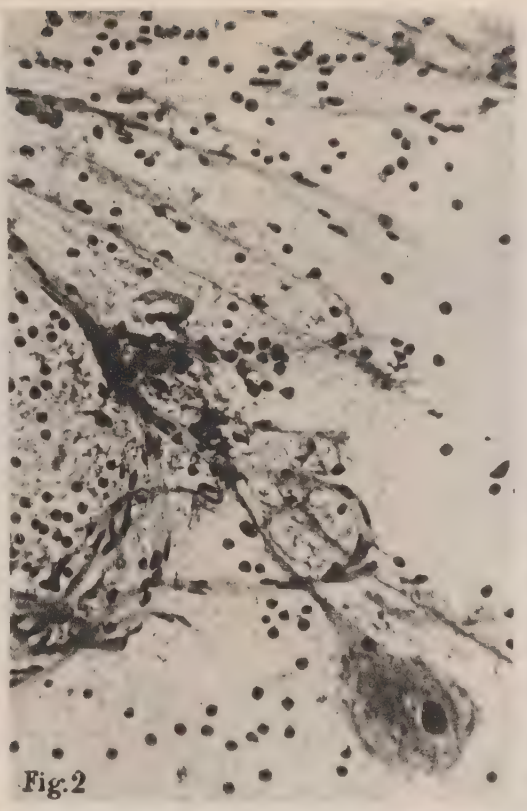

Fig.2

Fig.3

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Fig.5

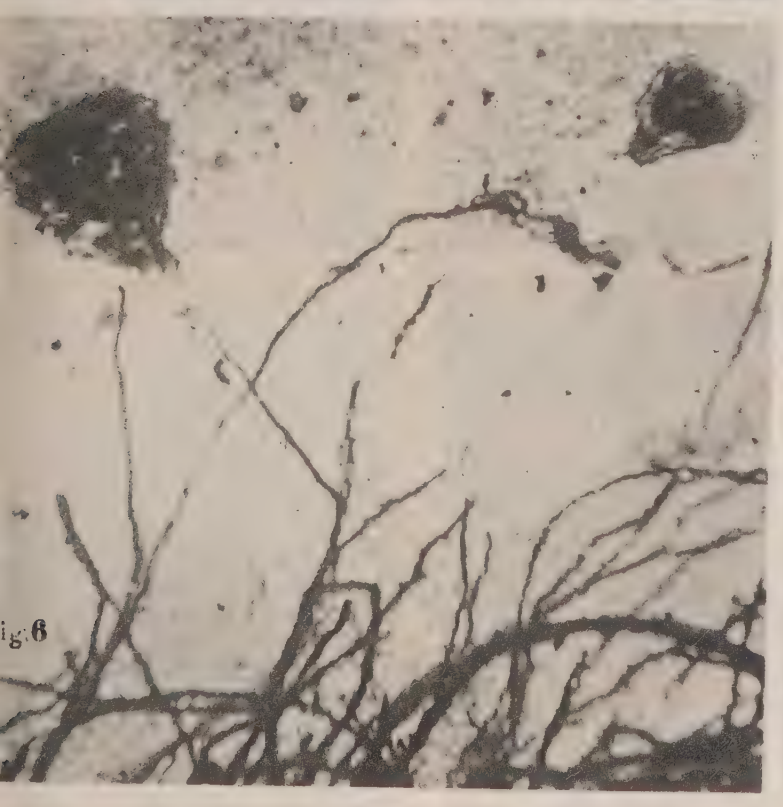
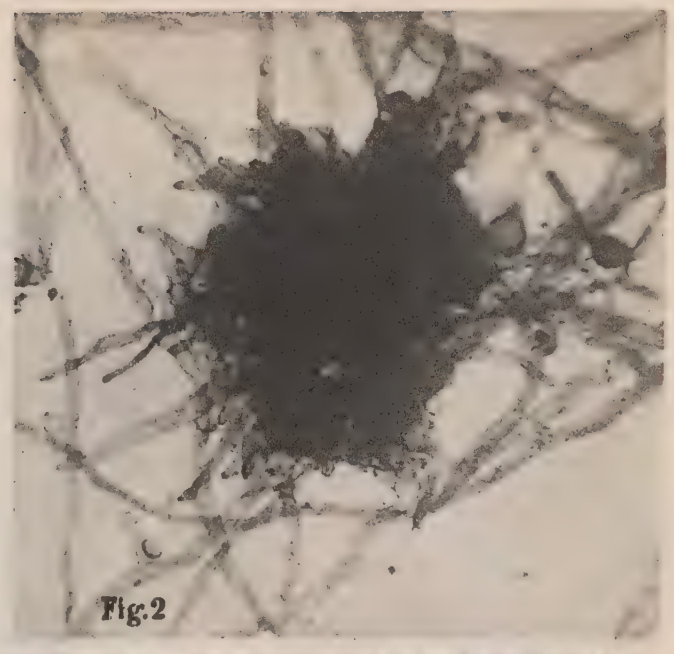


Fig.6

Fig.7

Fig.1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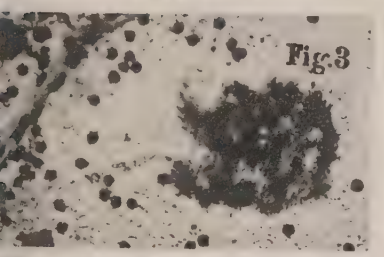
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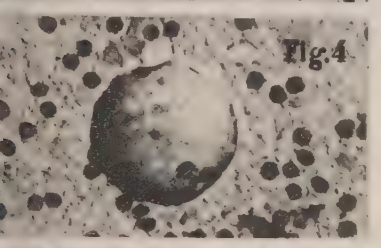
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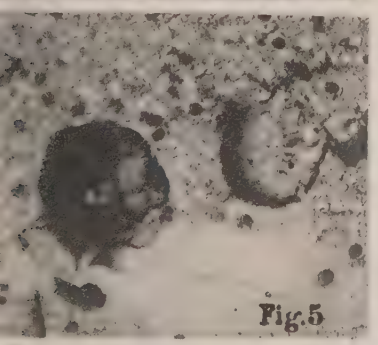
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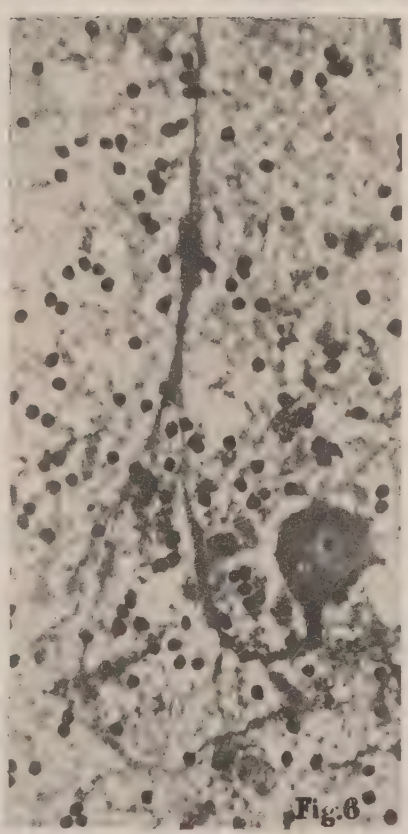
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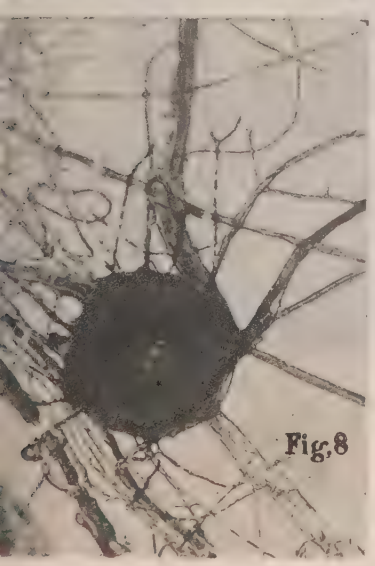
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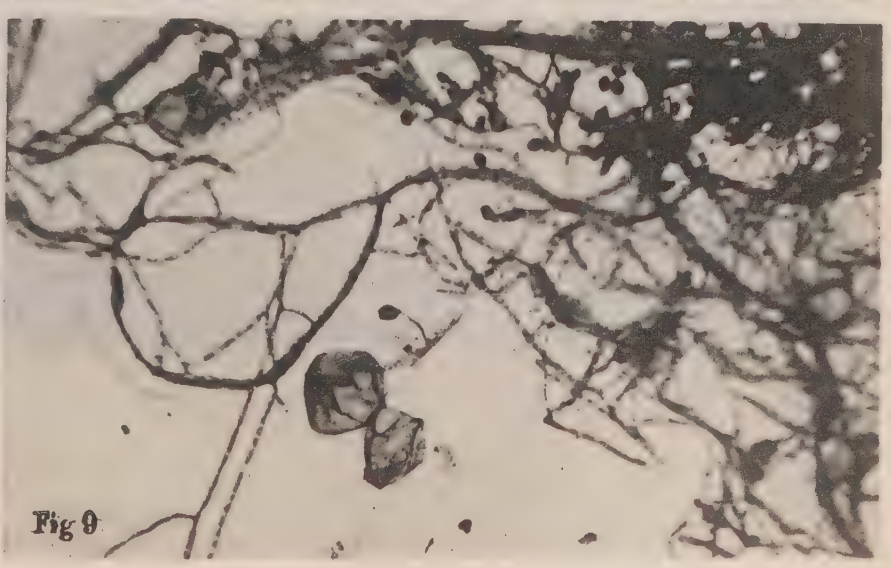
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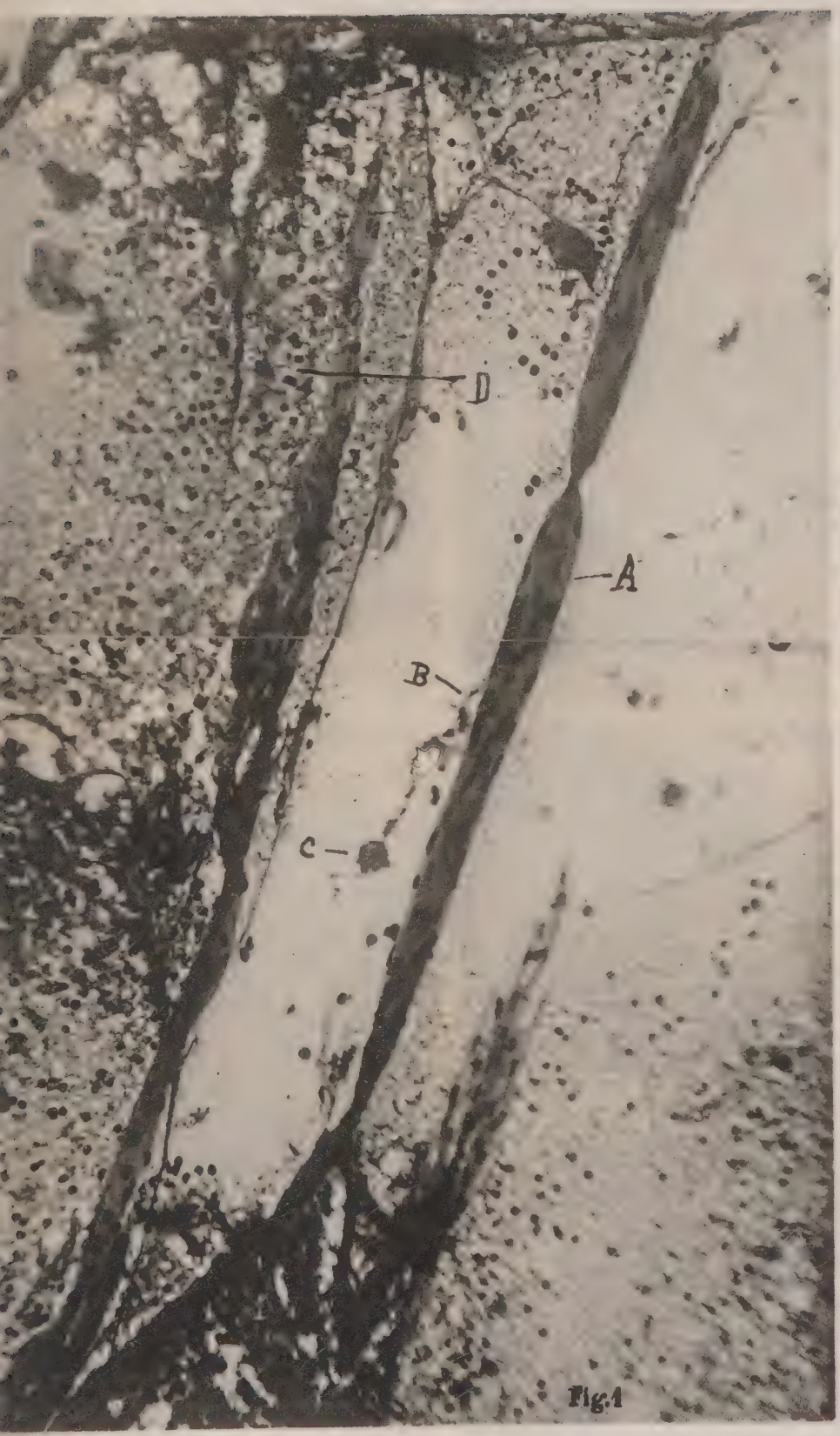
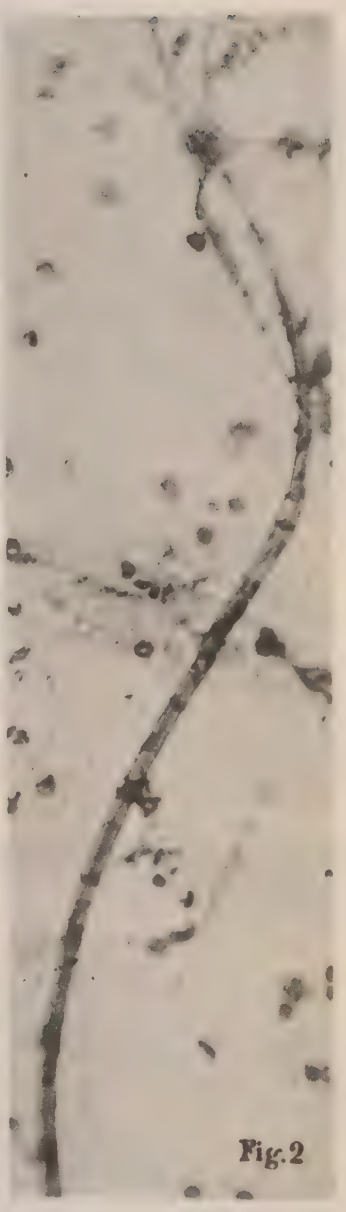


Fig.1



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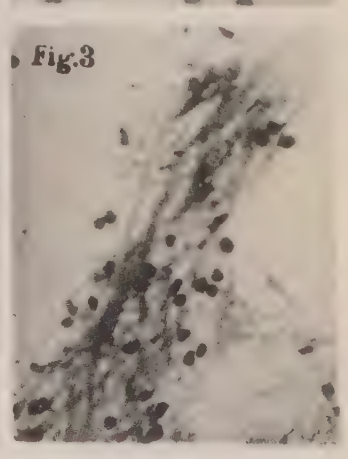


Fig.3

Fig.1

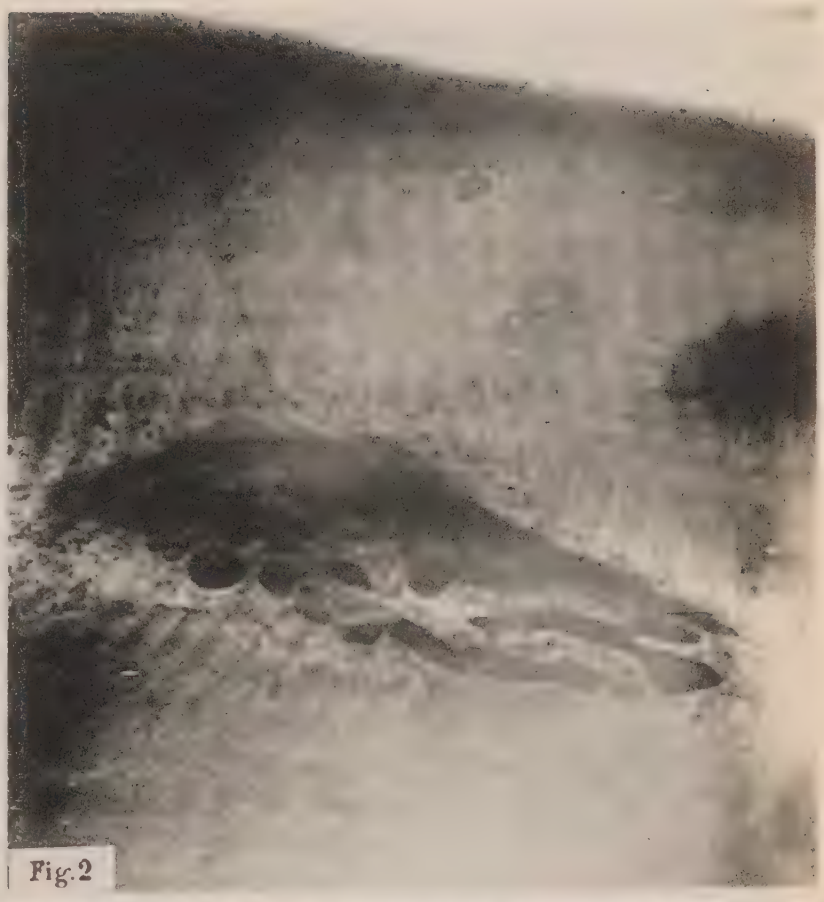
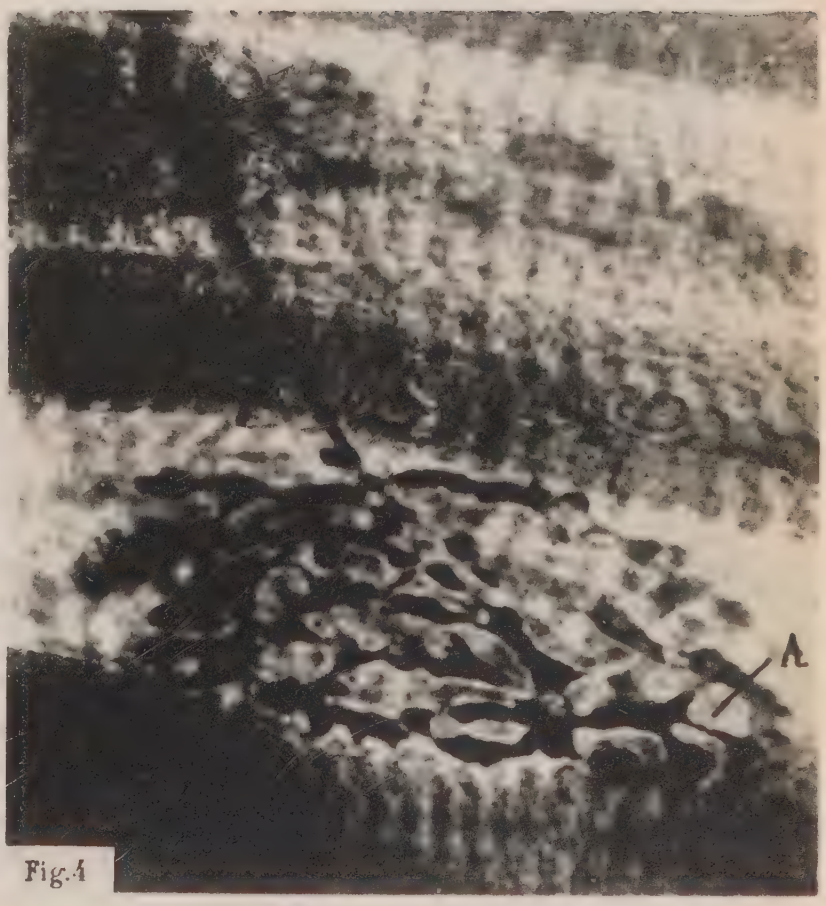


Fig.2

Fig.3



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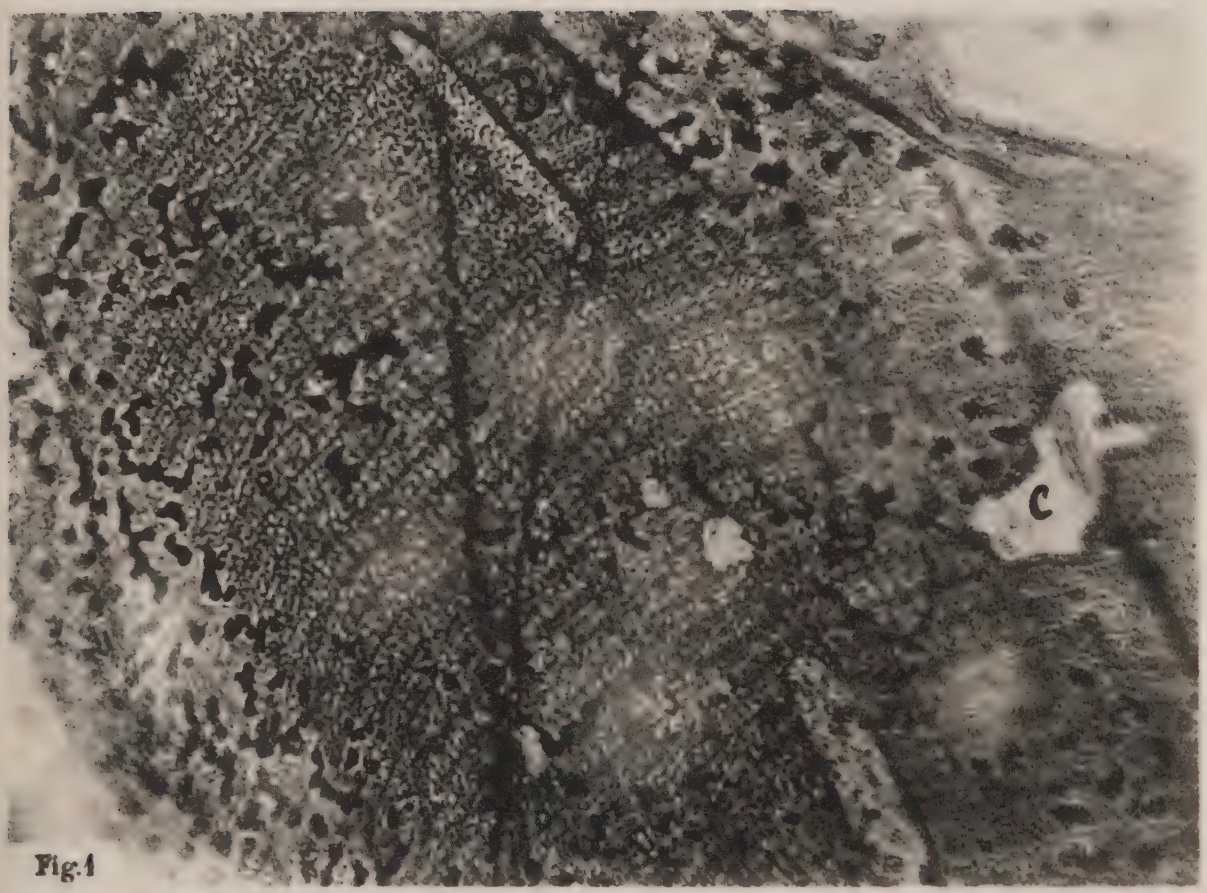
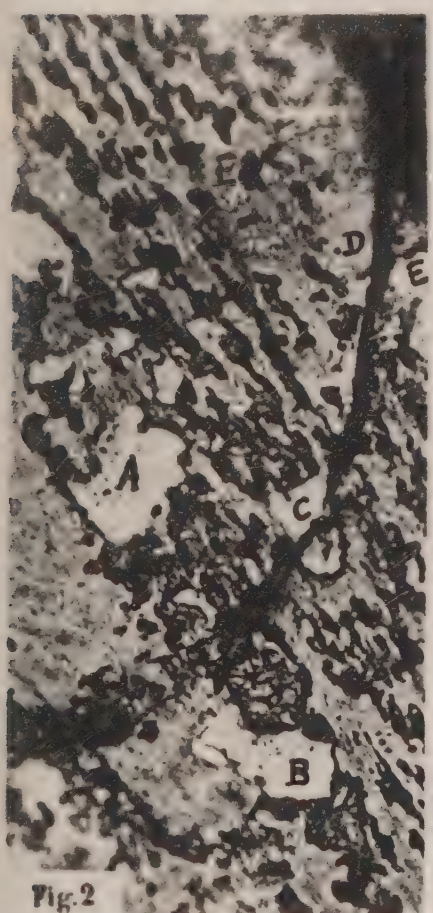


Fig.1



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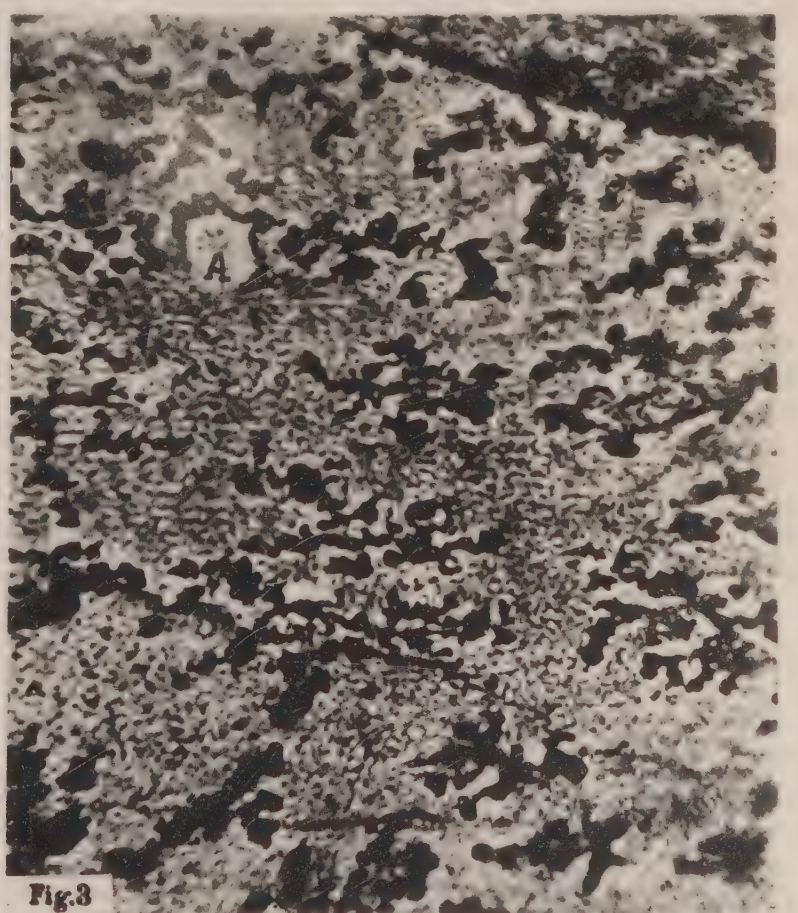

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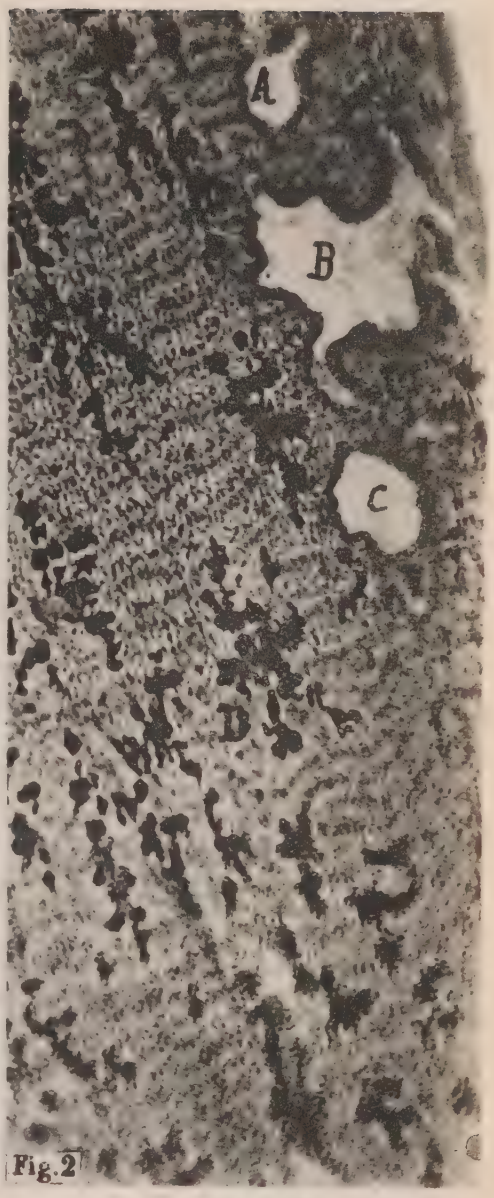

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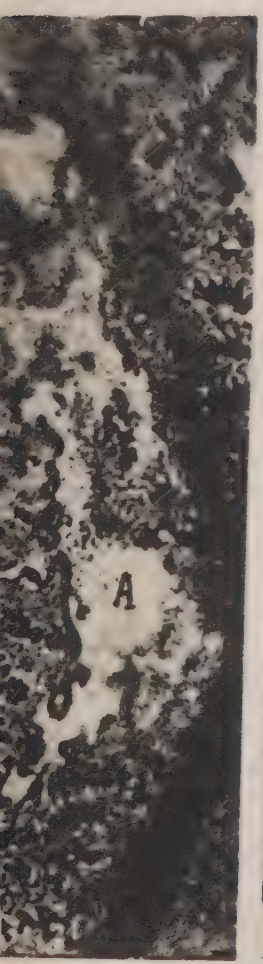


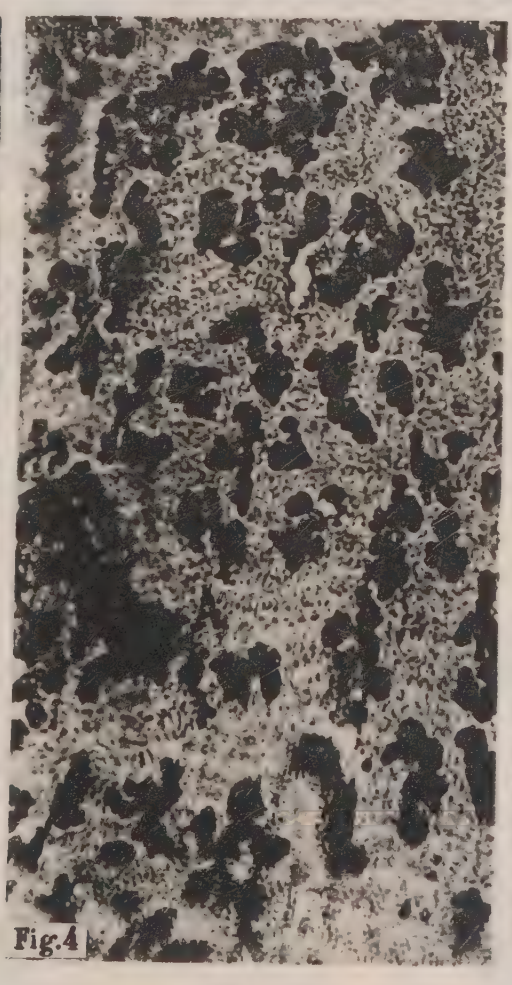


Fig.4

Fig.5

Fig.1

Fig.2

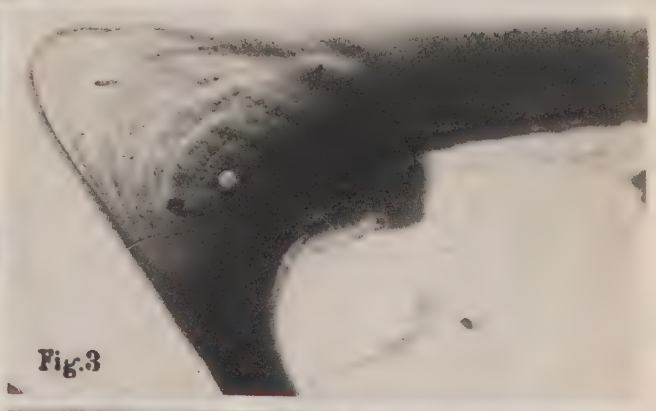


Fig.3

Fig.4

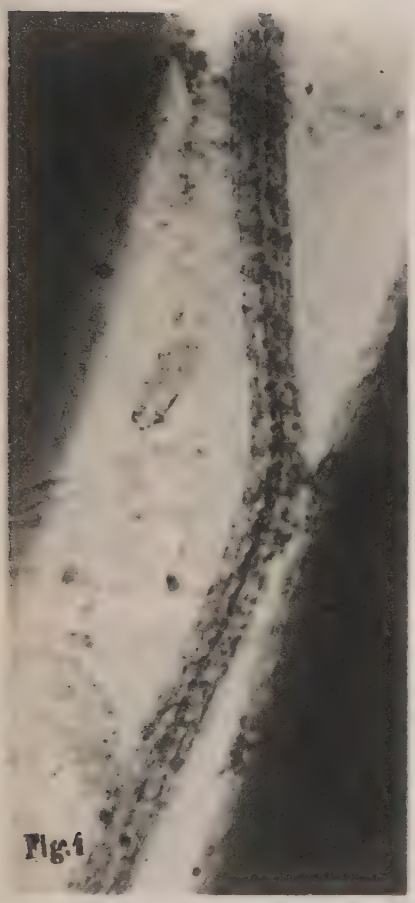
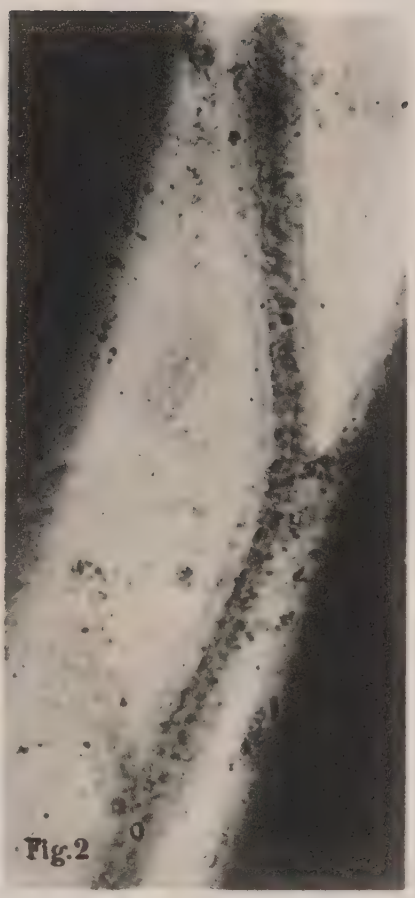


Fig.1



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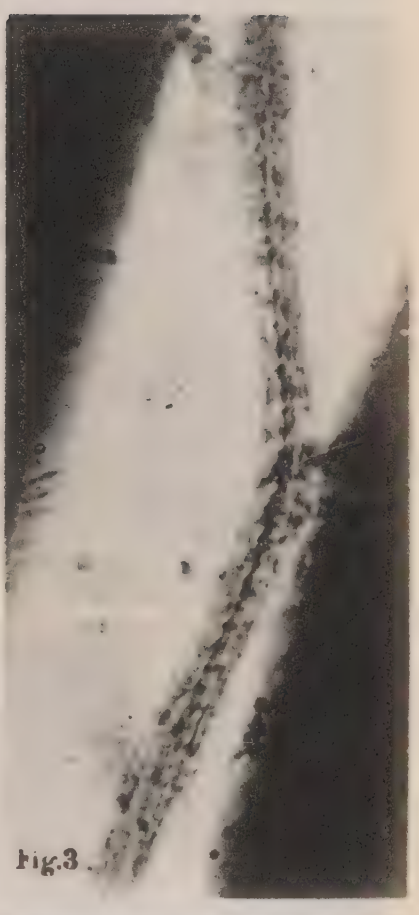

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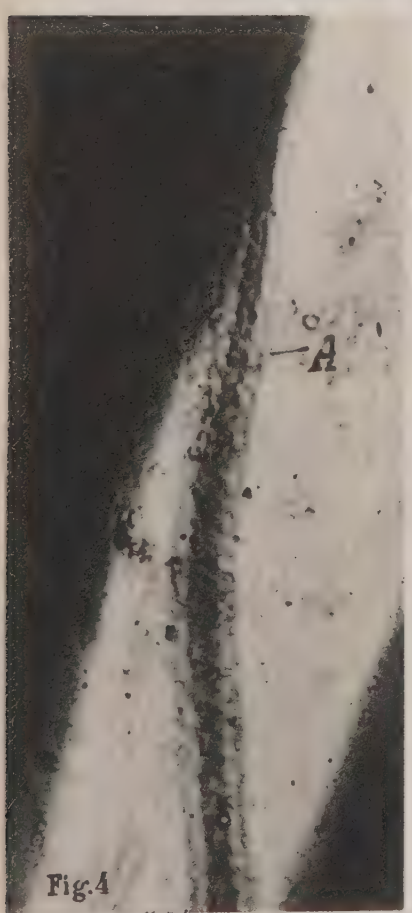

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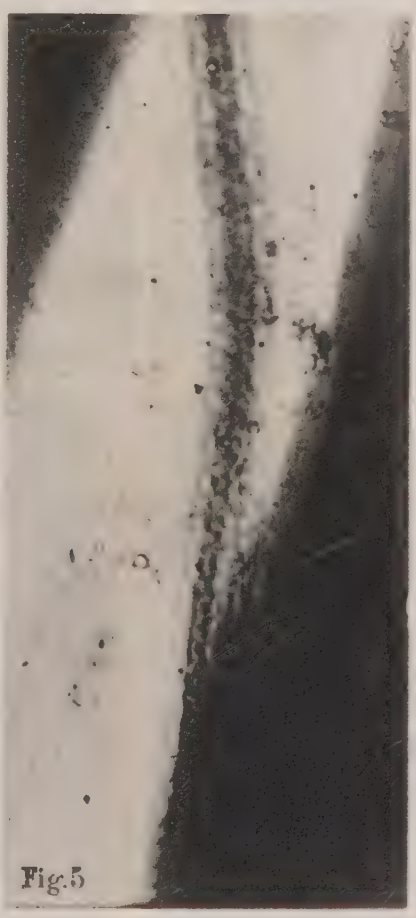

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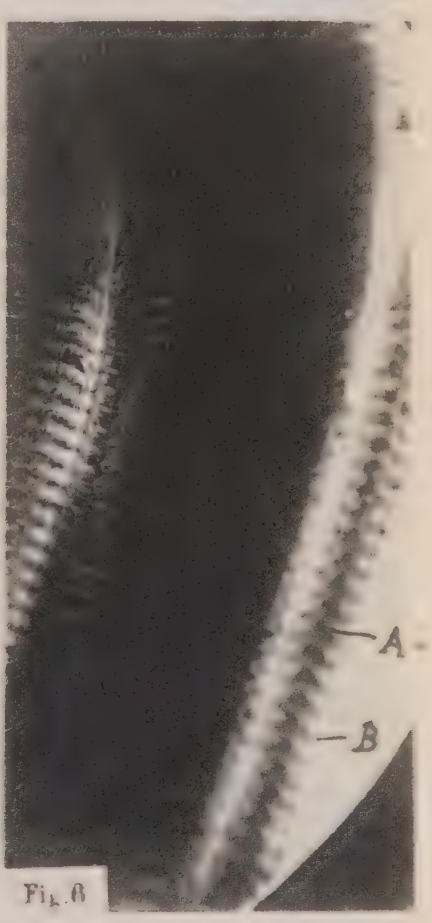


Fig.6

Fig.1

Fig.2

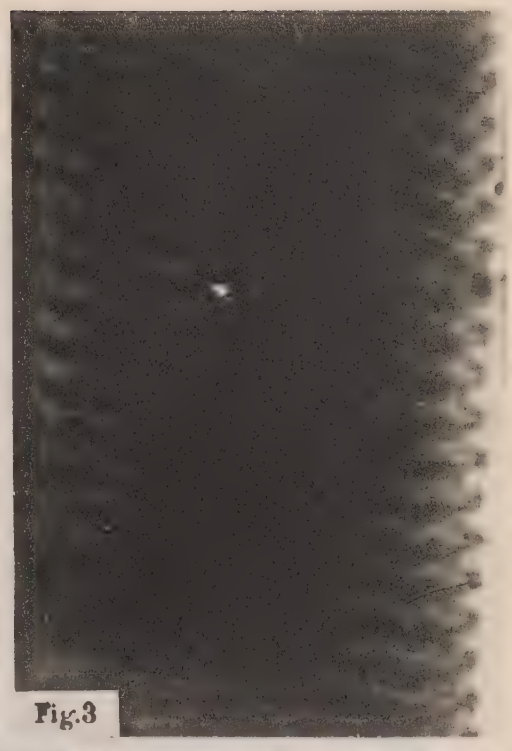
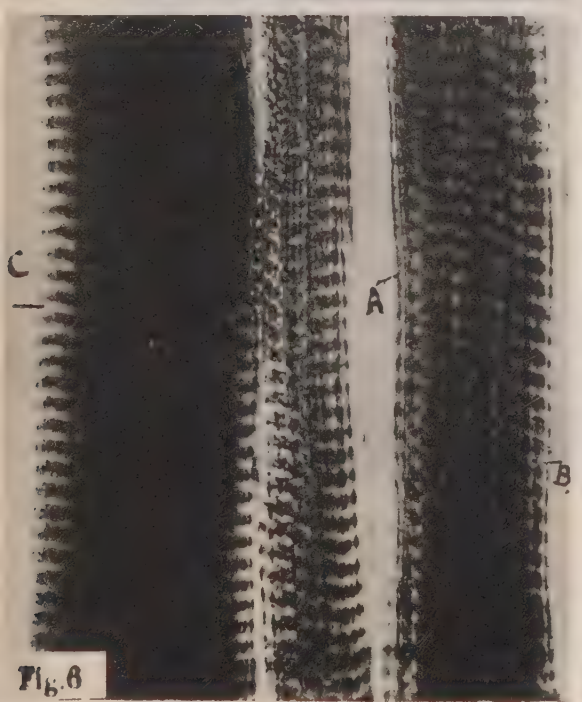


Fig.3

Fig.4

Fig.5



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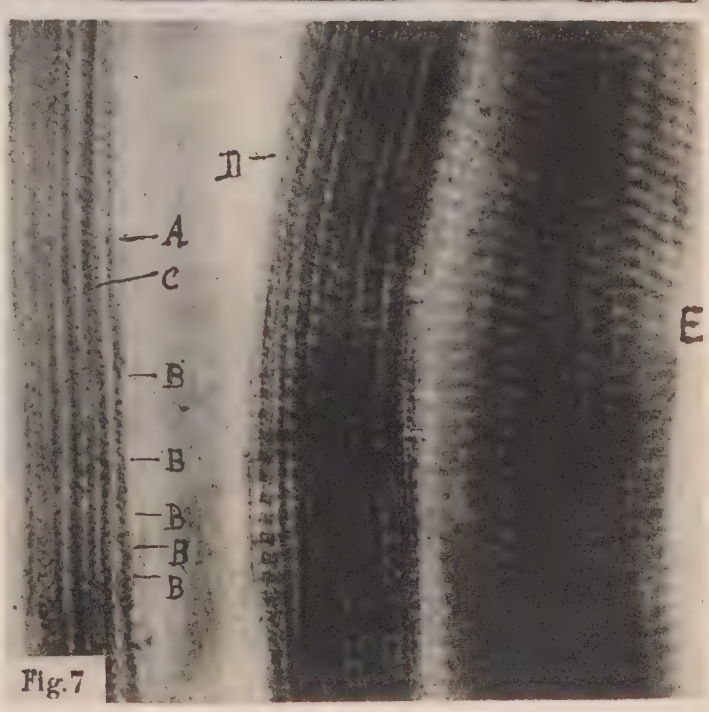

Fig.7

Fig.1

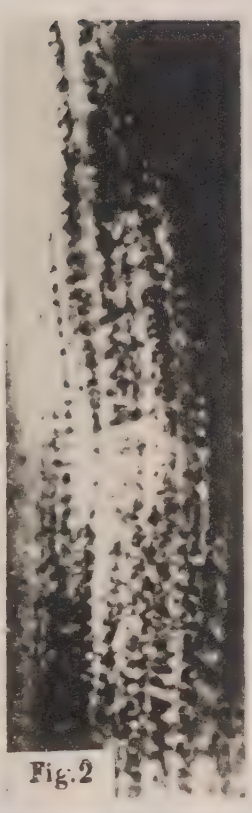

Fig.2

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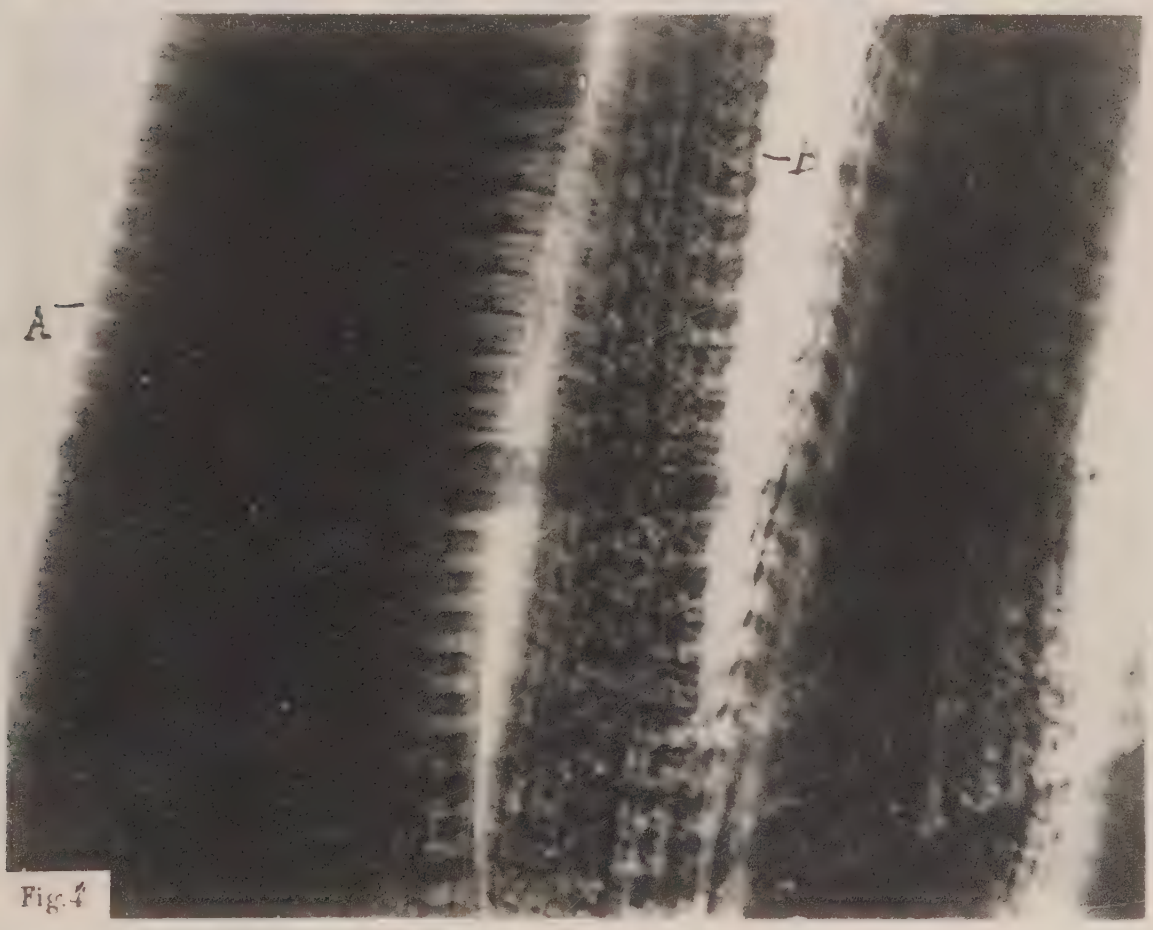

Fig.4

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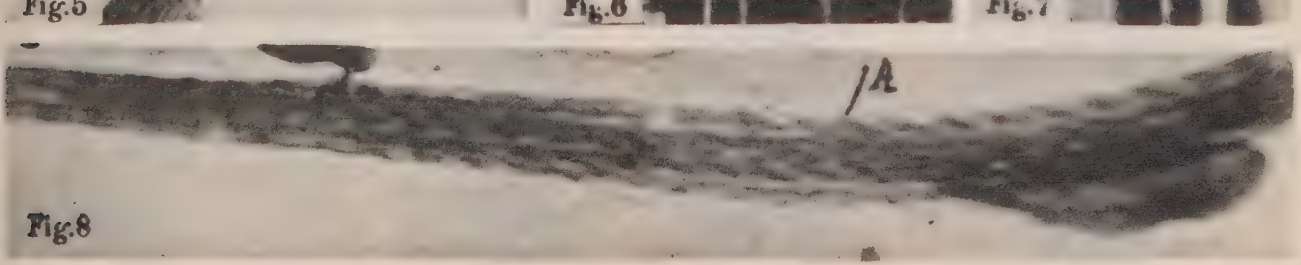

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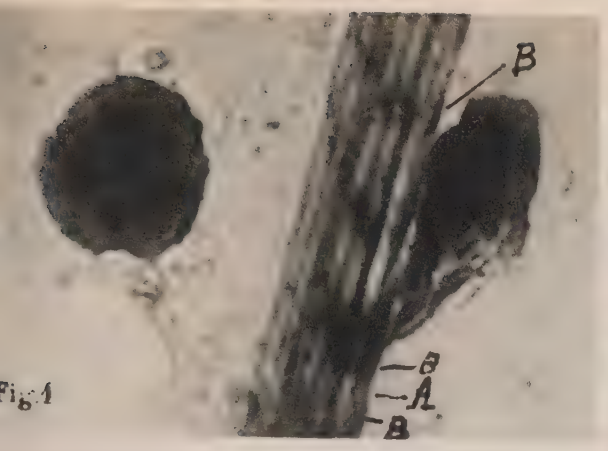
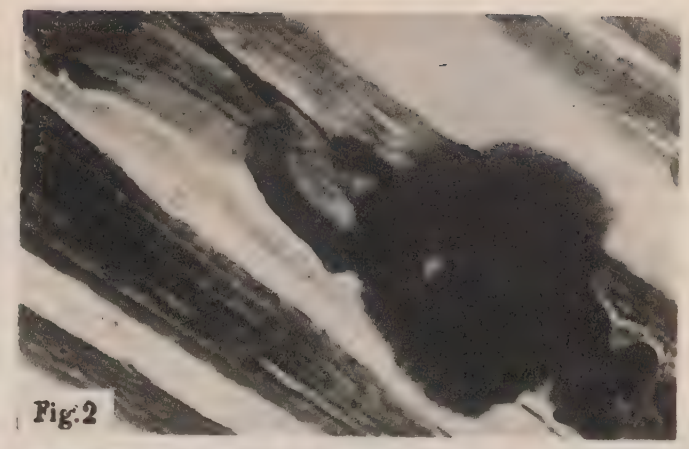


Fig. 1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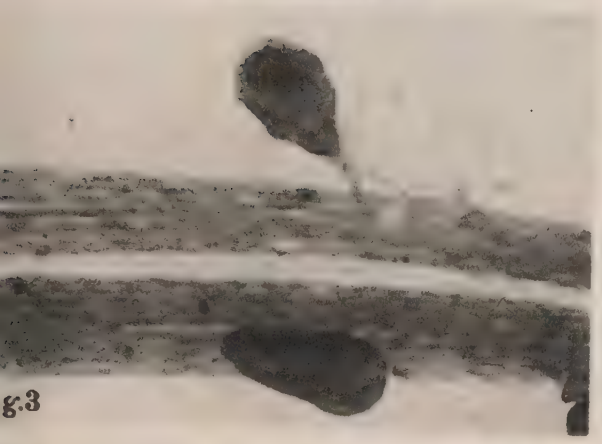
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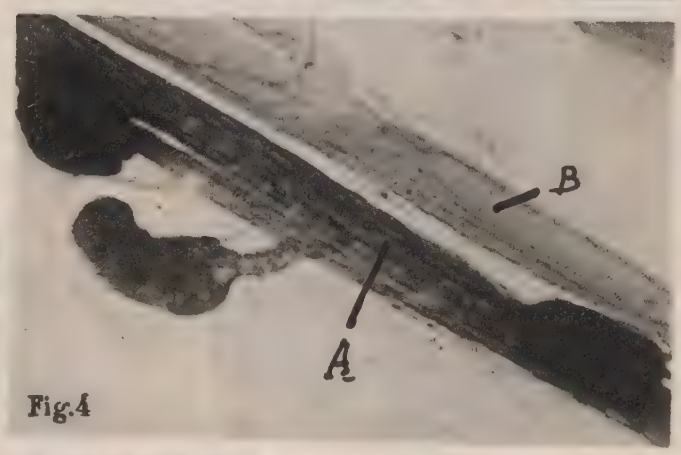

Fig. 4

Fig. 5

Fig. 6

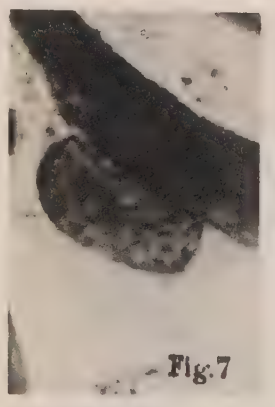
Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

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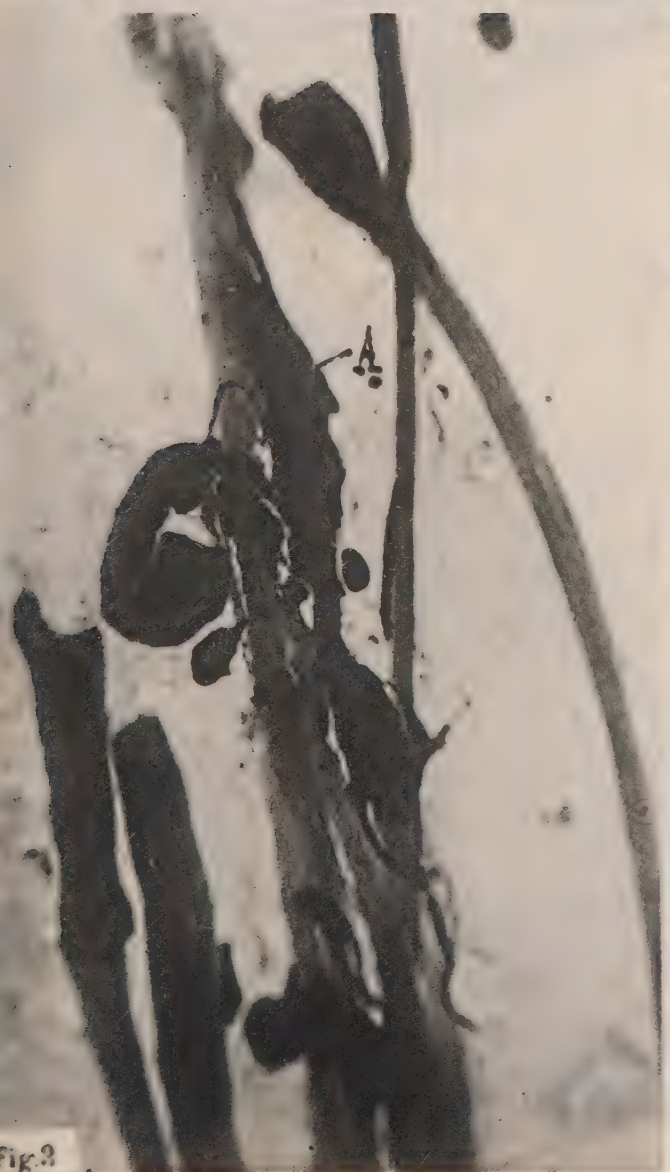

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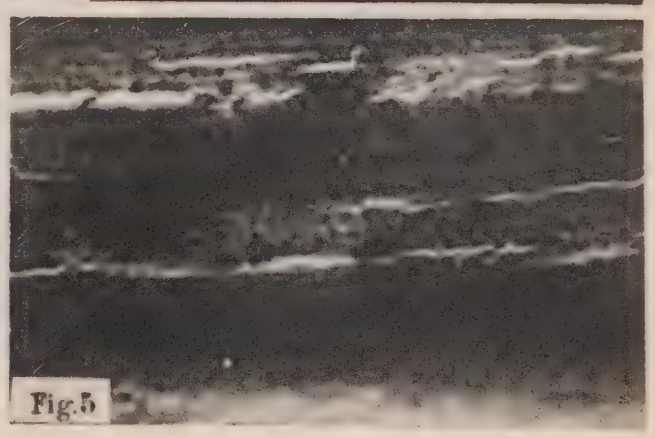

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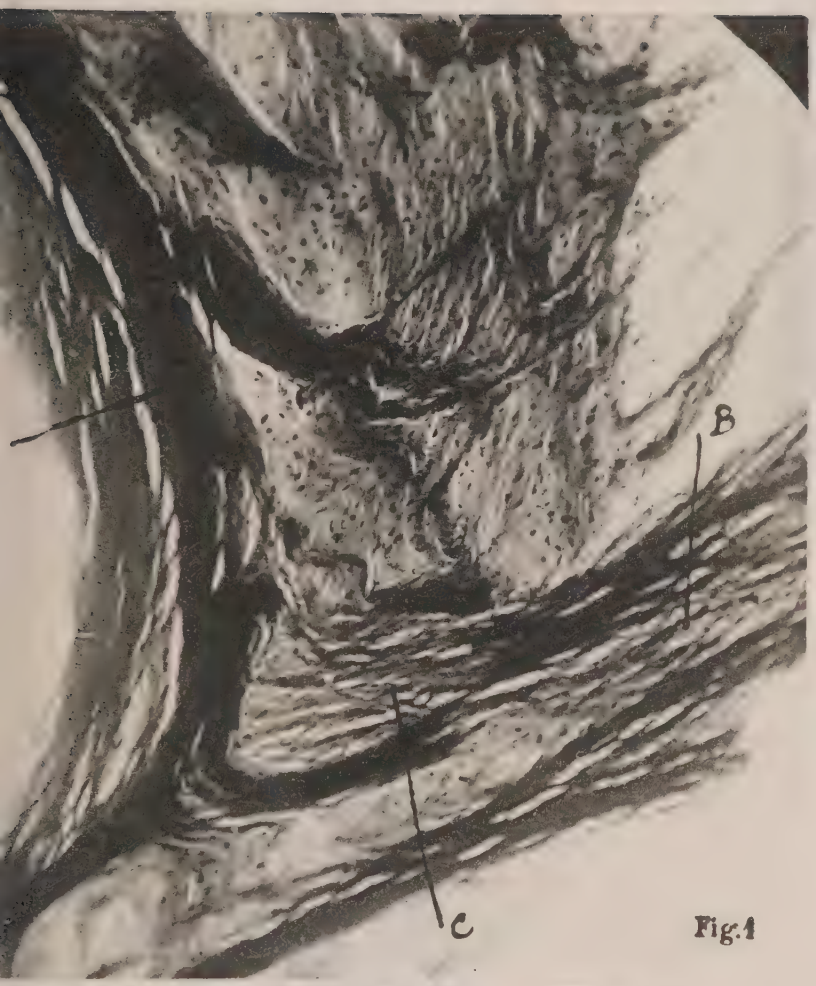

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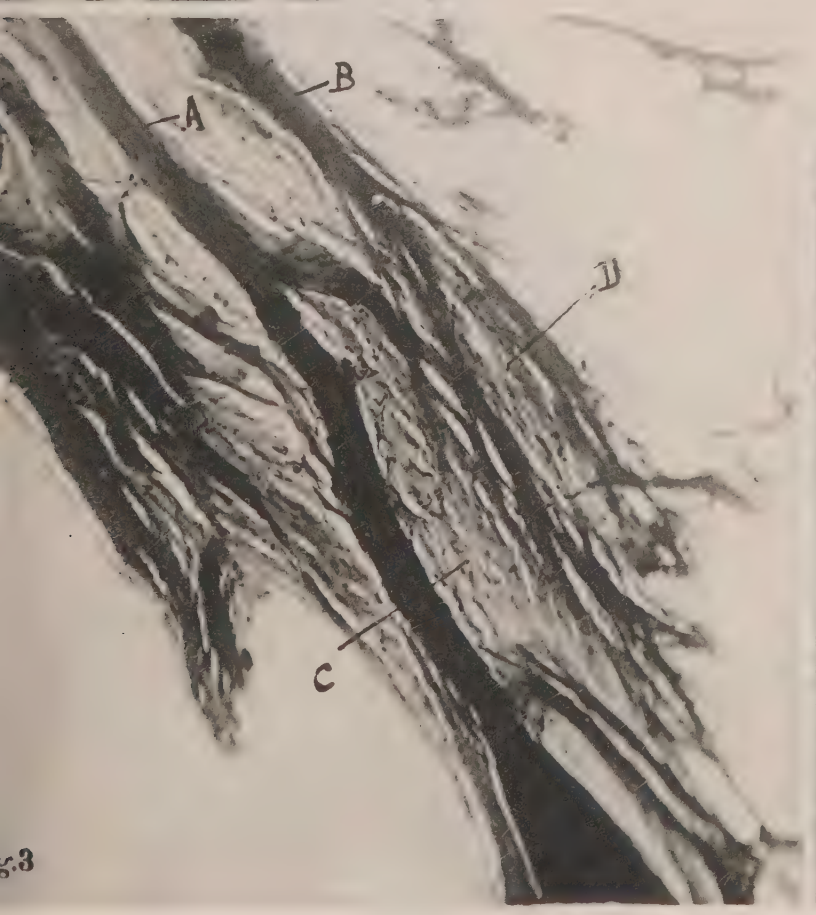

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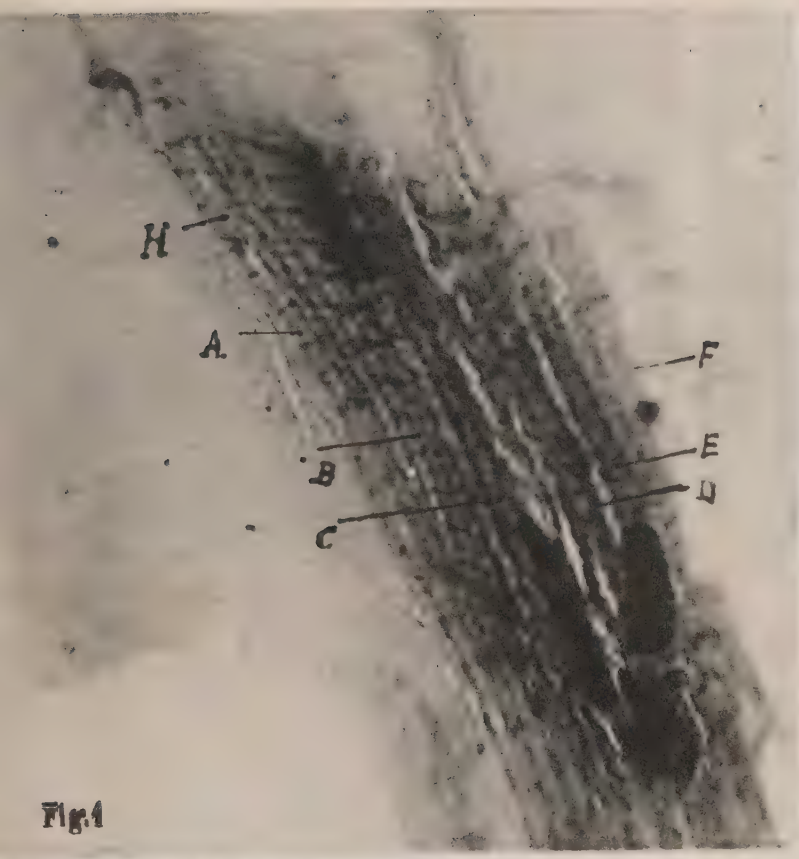
Fig.4



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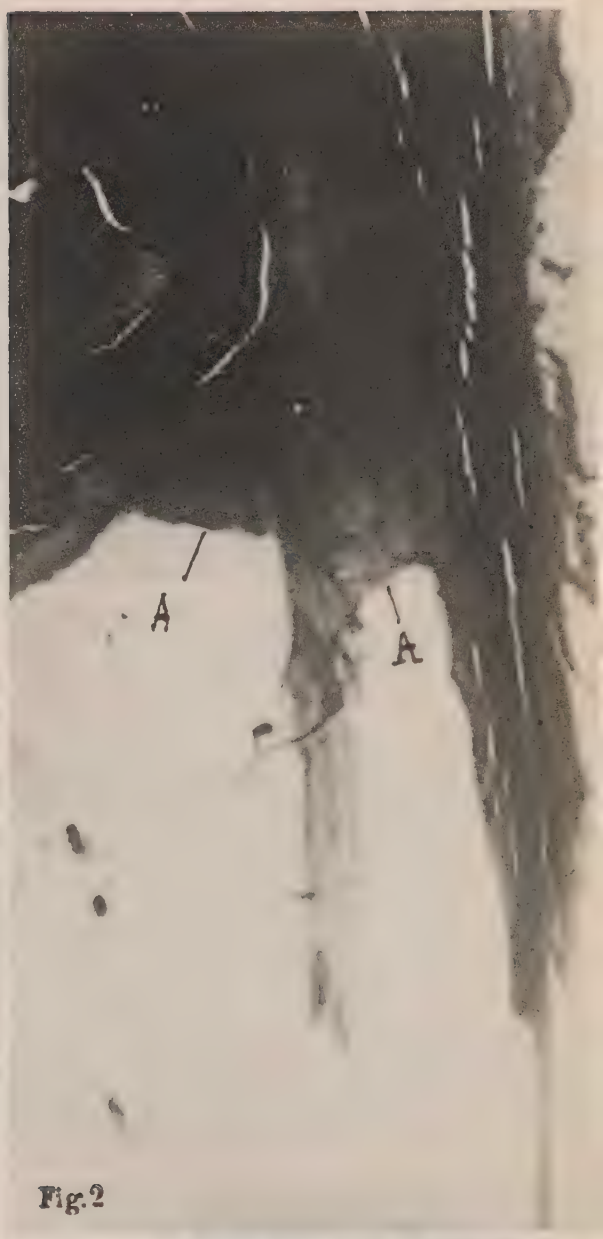

Fig.2

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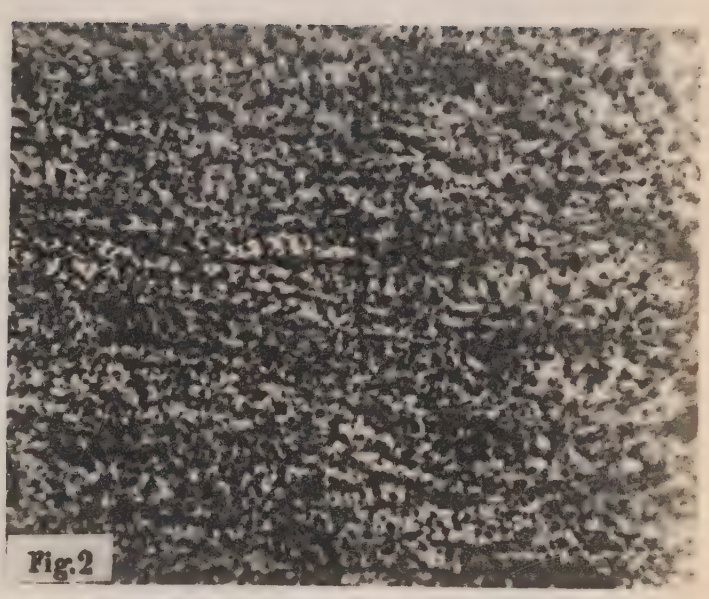

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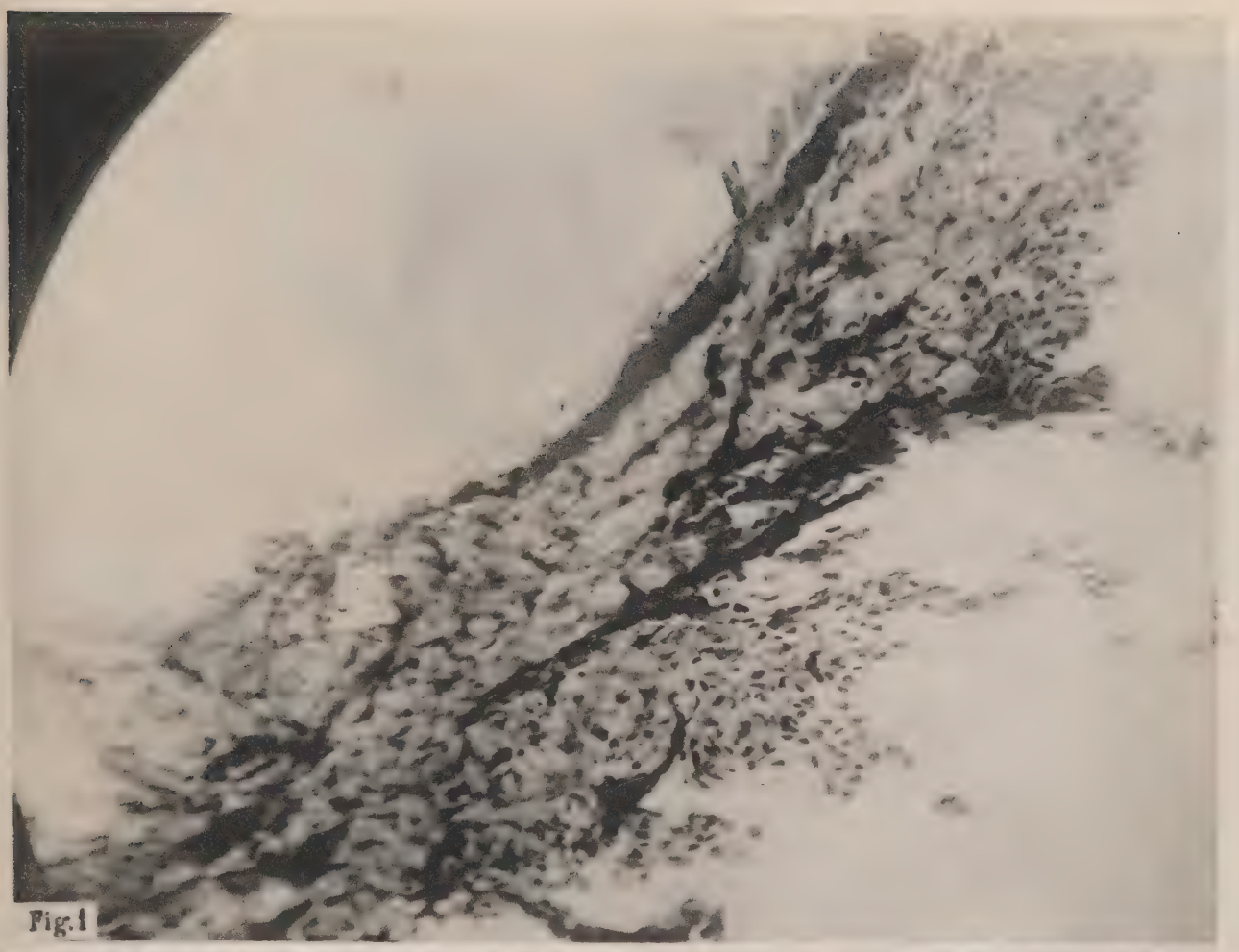

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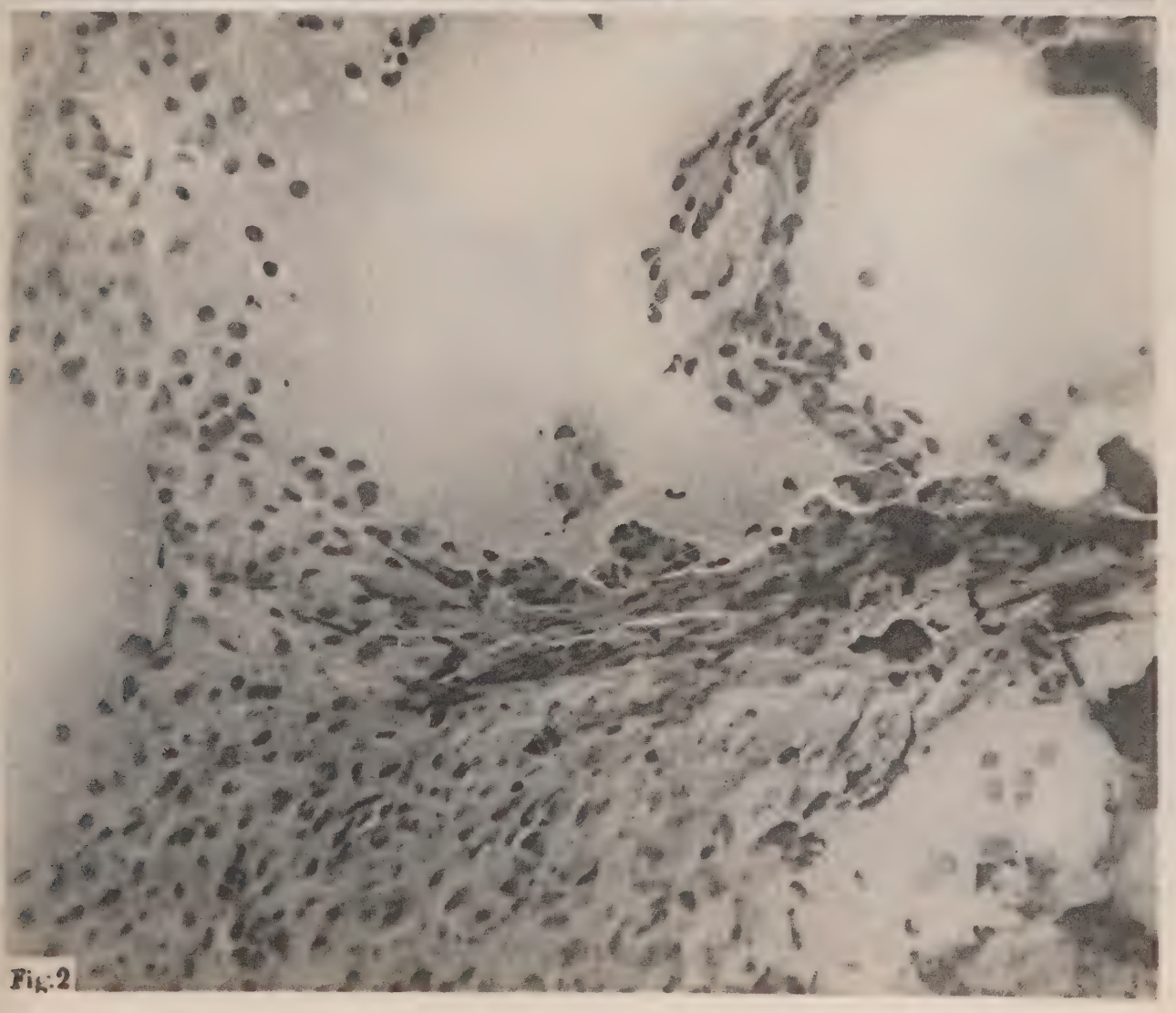

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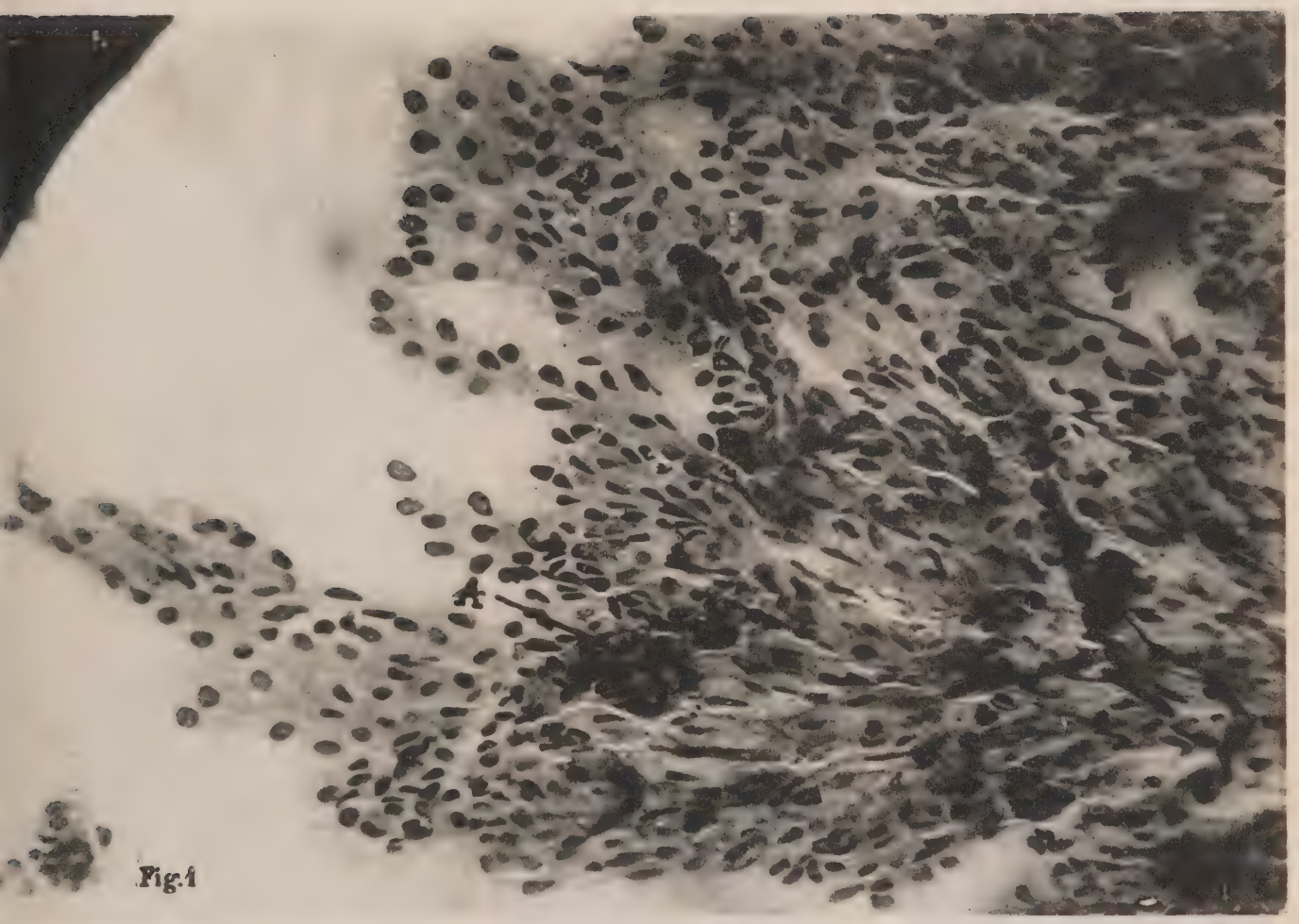

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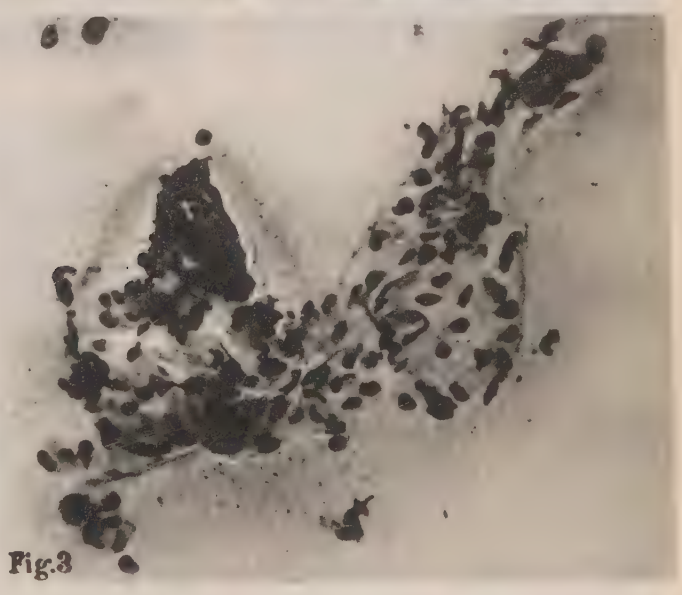

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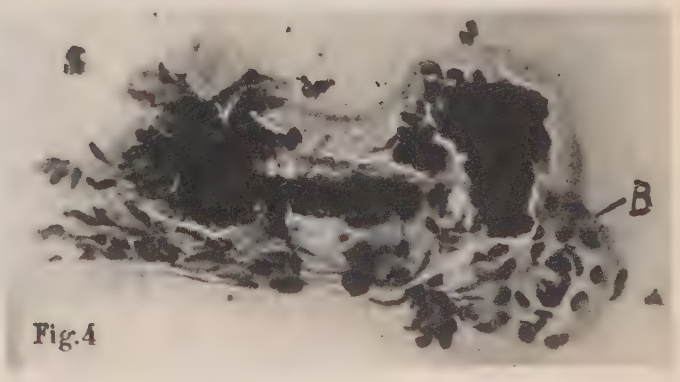

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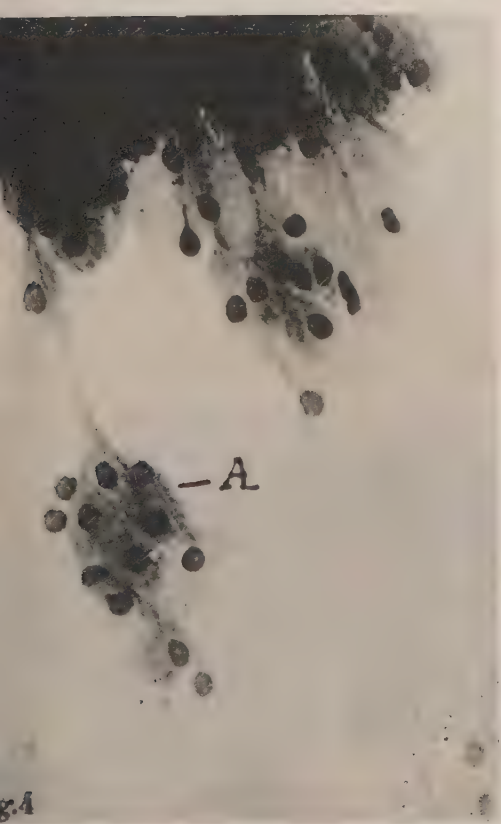

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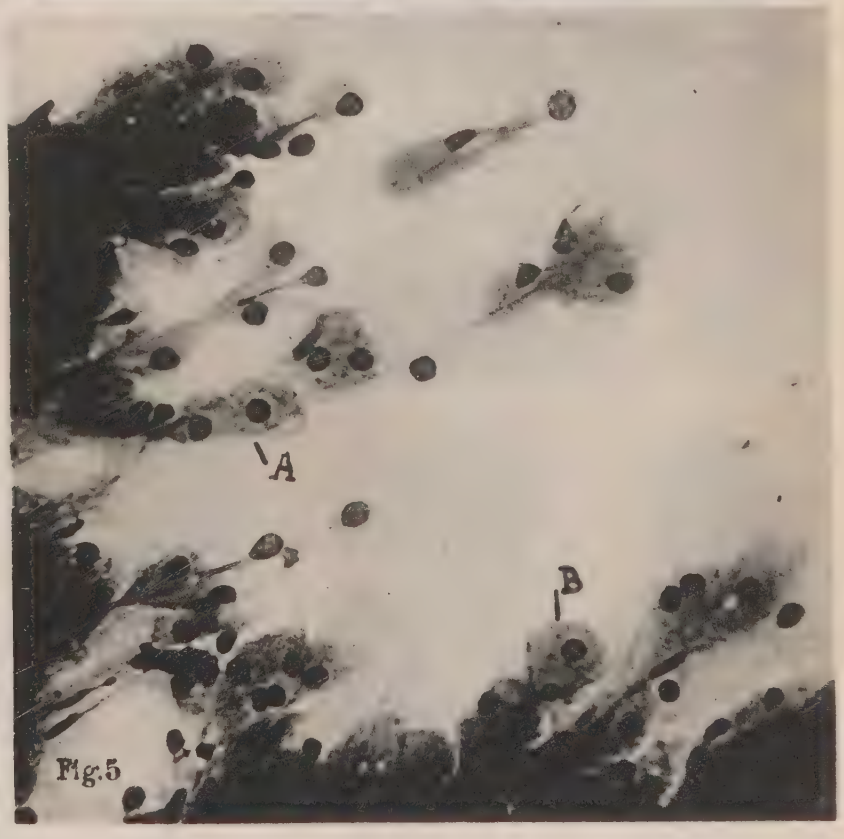

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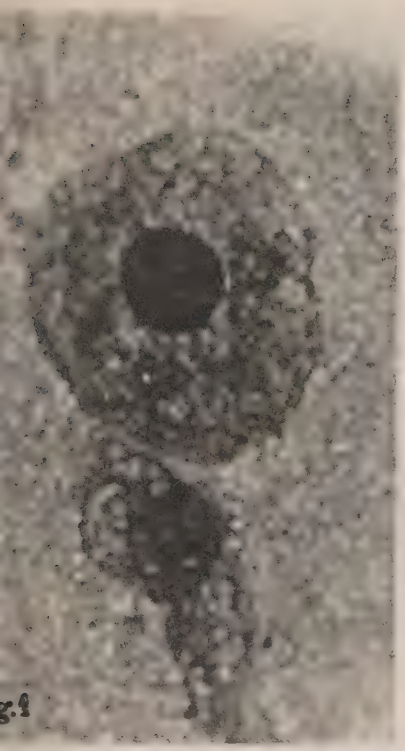

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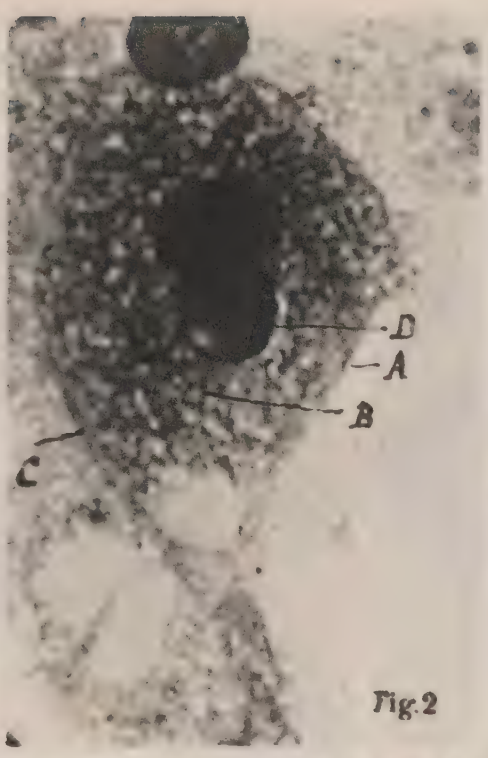

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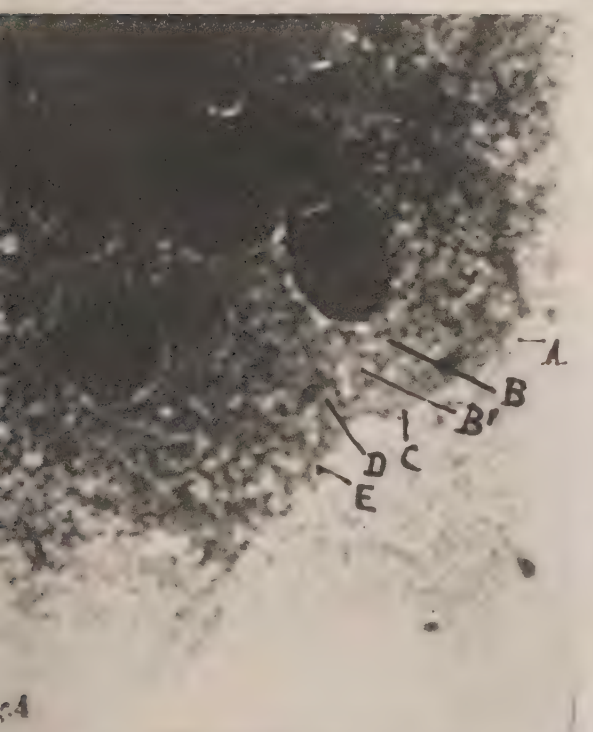

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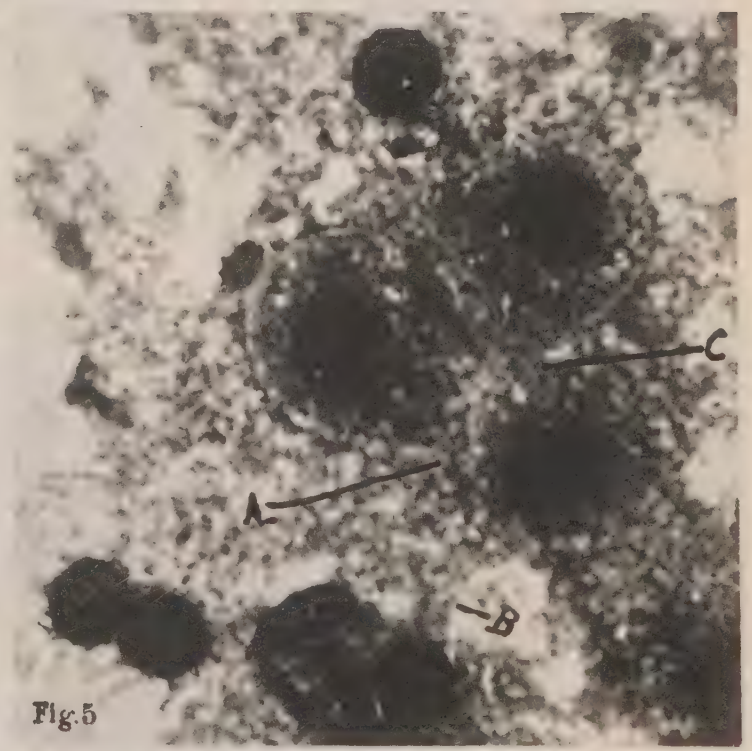

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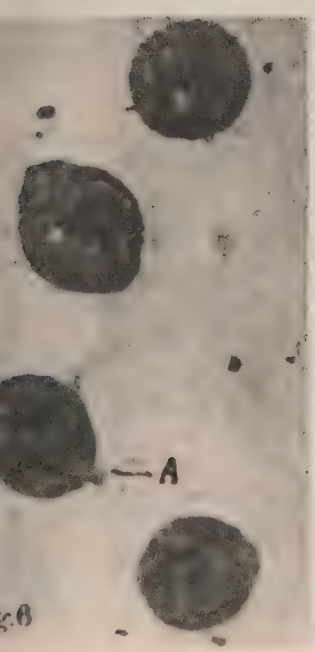

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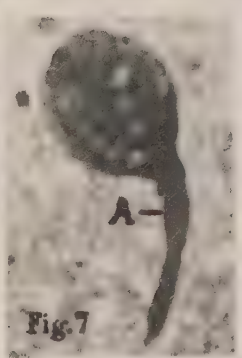

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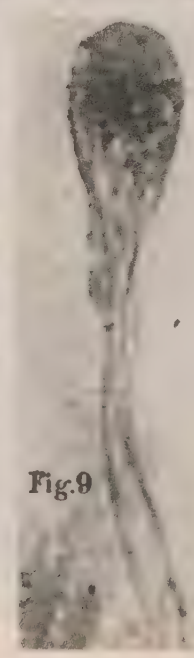

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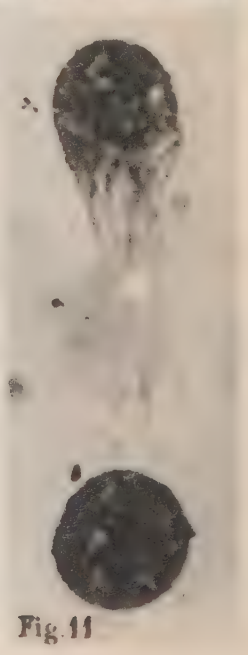

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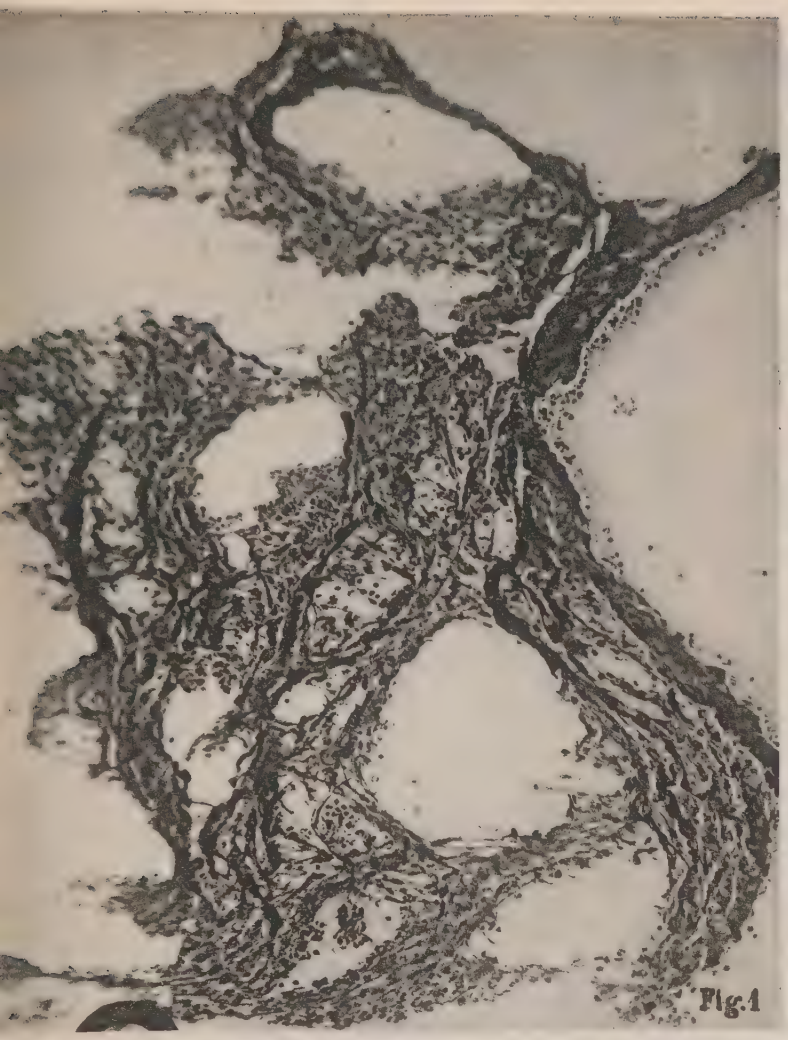

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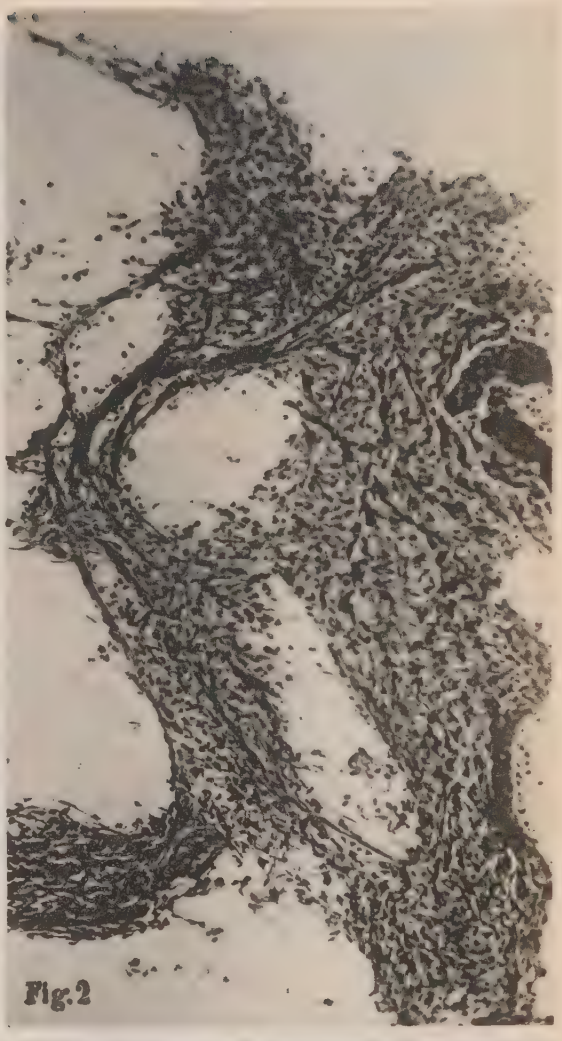
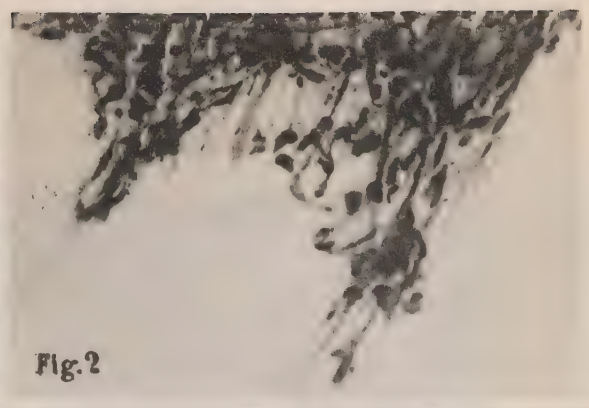


Fig.2

Fig.3

Fig.1



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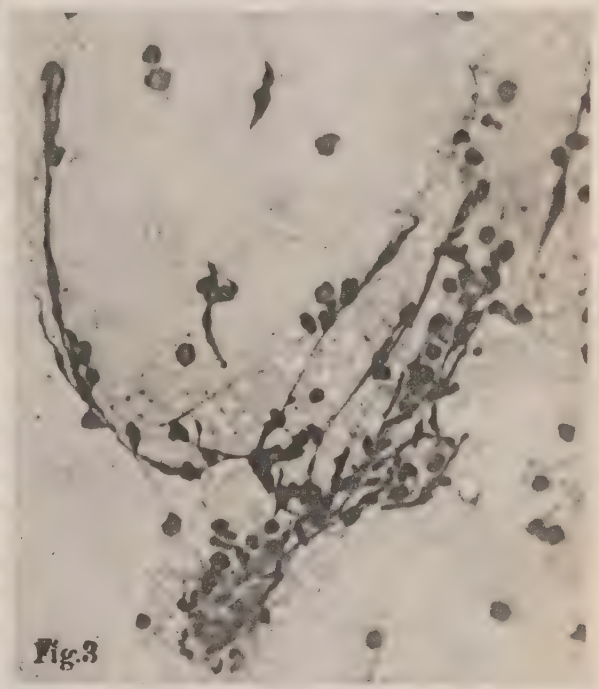

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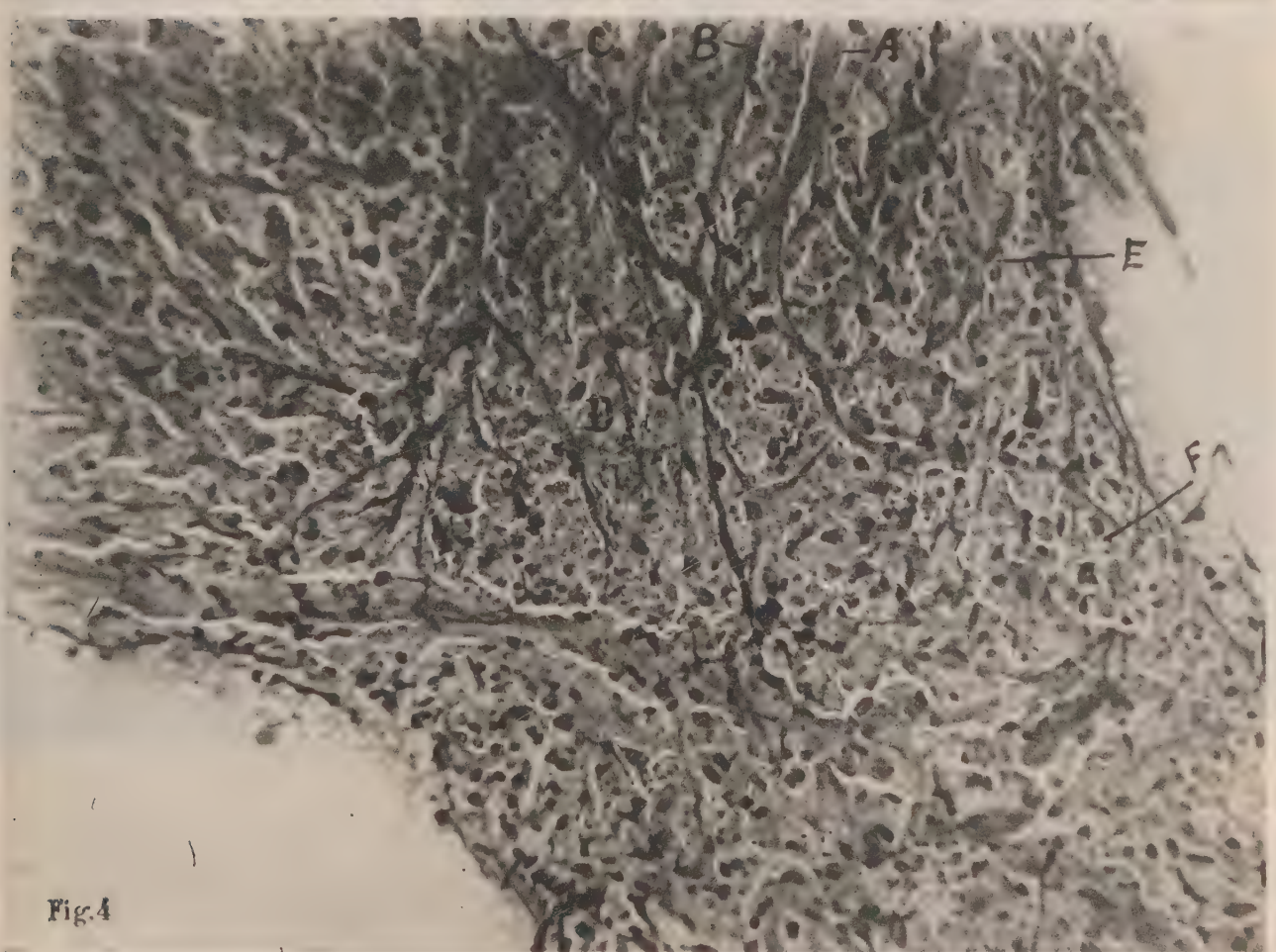

Fig.4

Fig.1

Fig.2

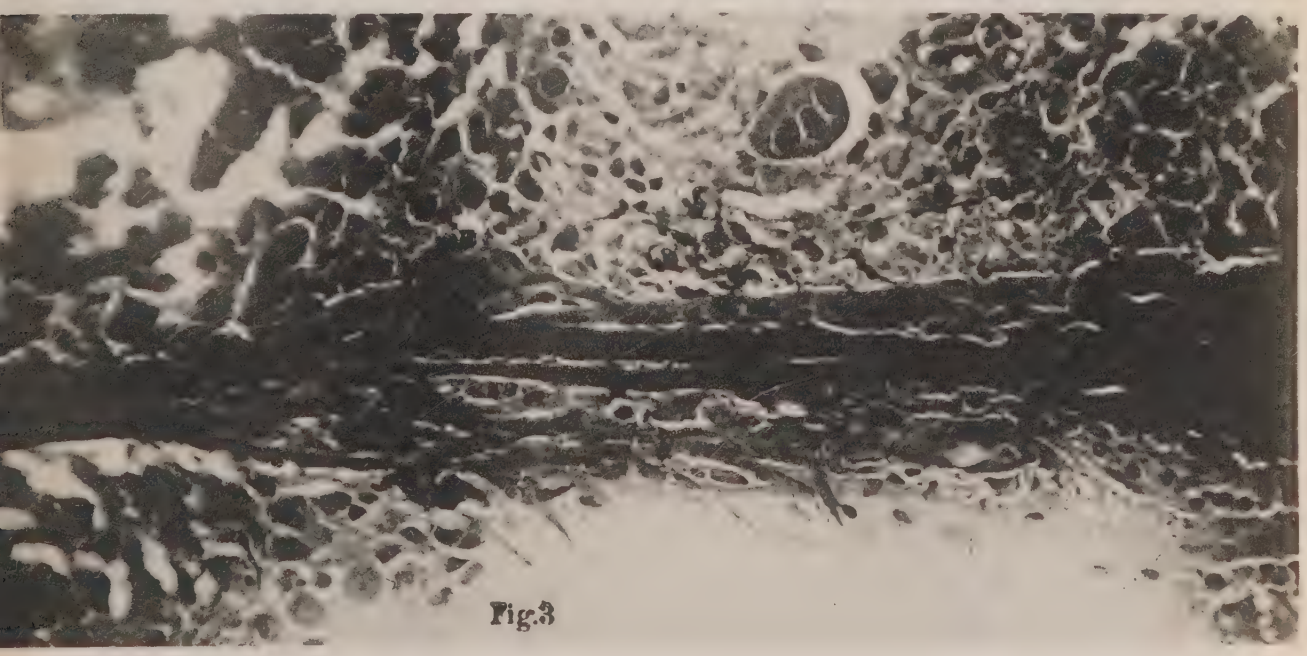

Fig.3

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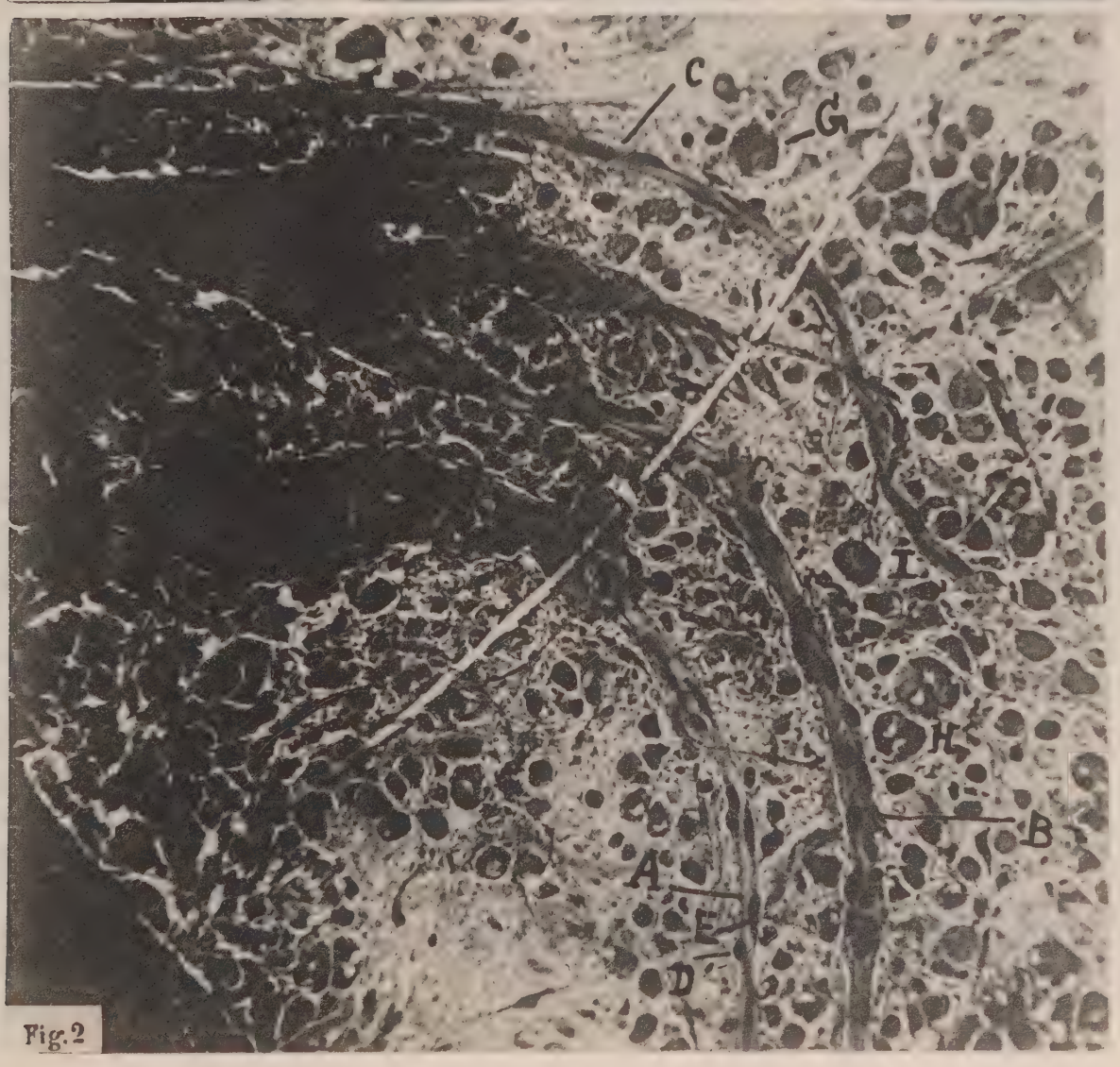
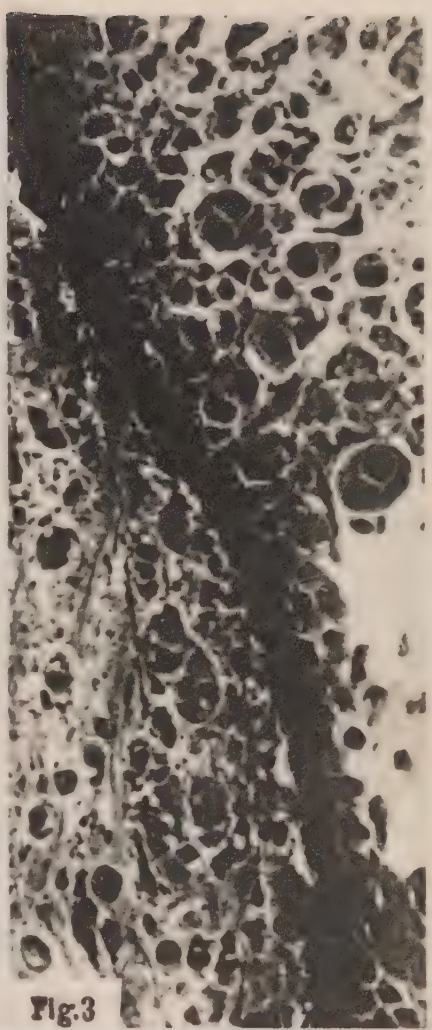


Fig.2

Fig.1

Fig.2



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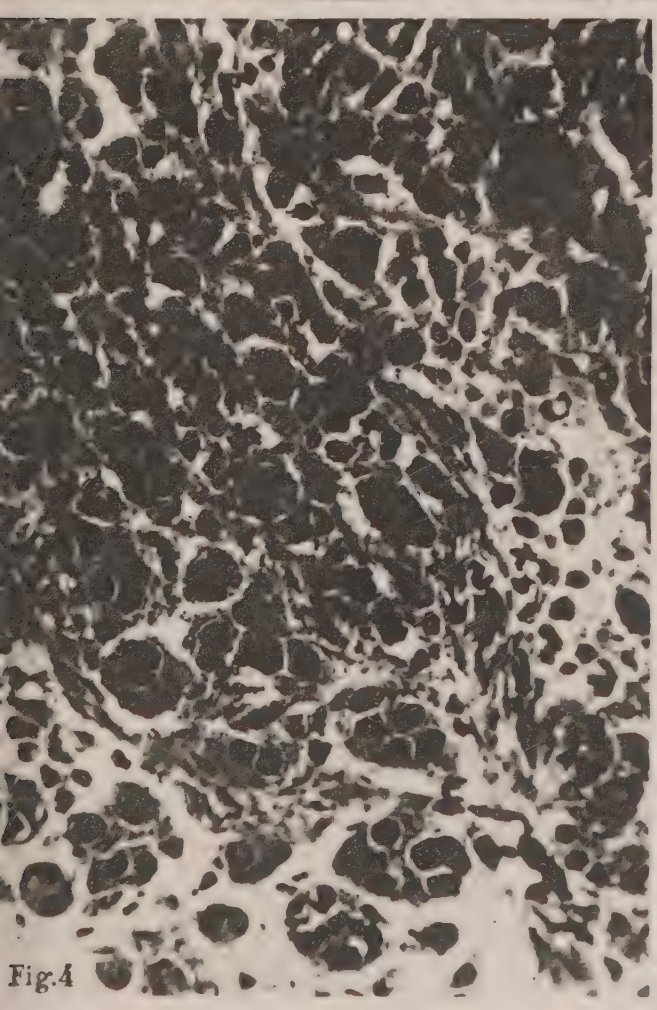

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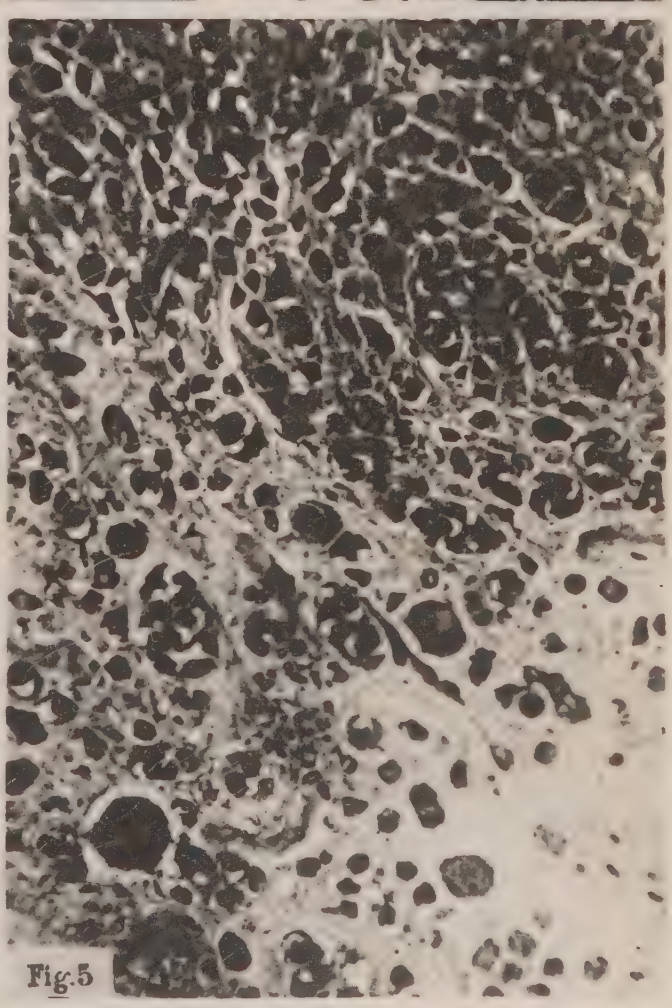

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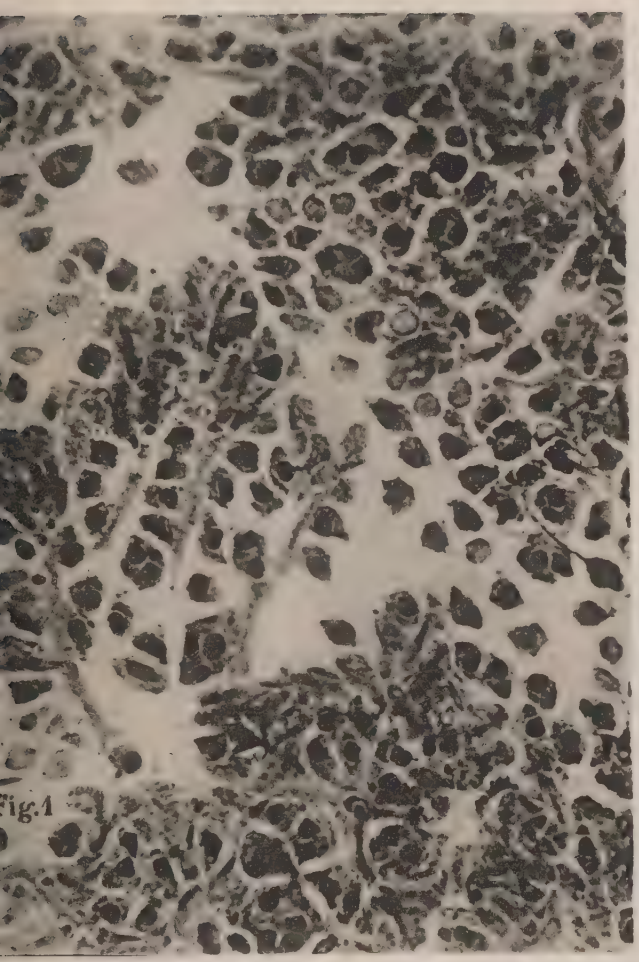

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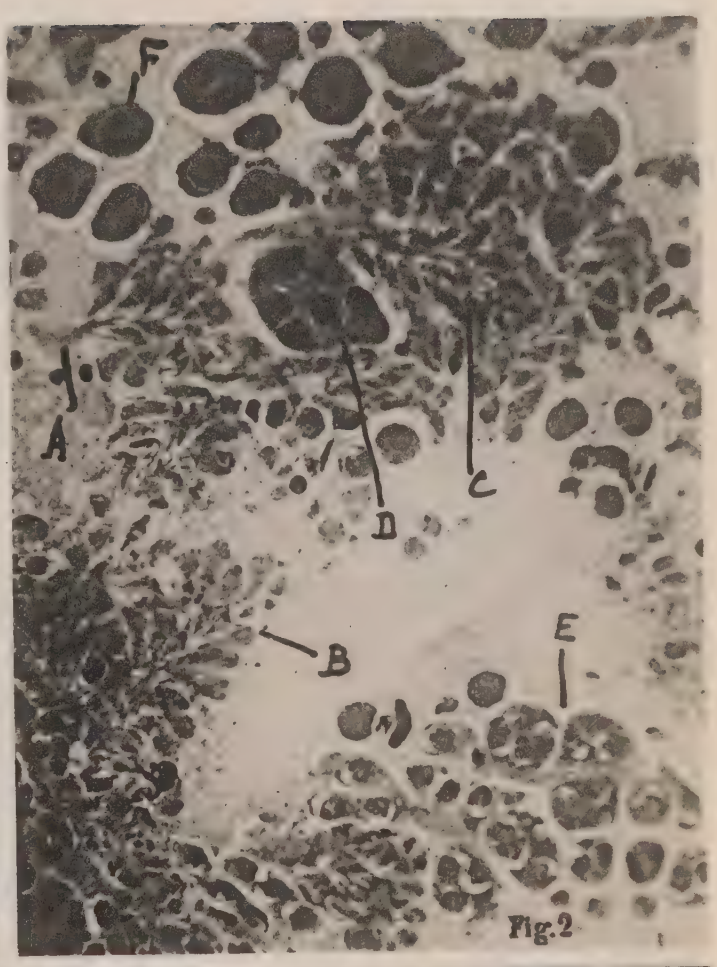

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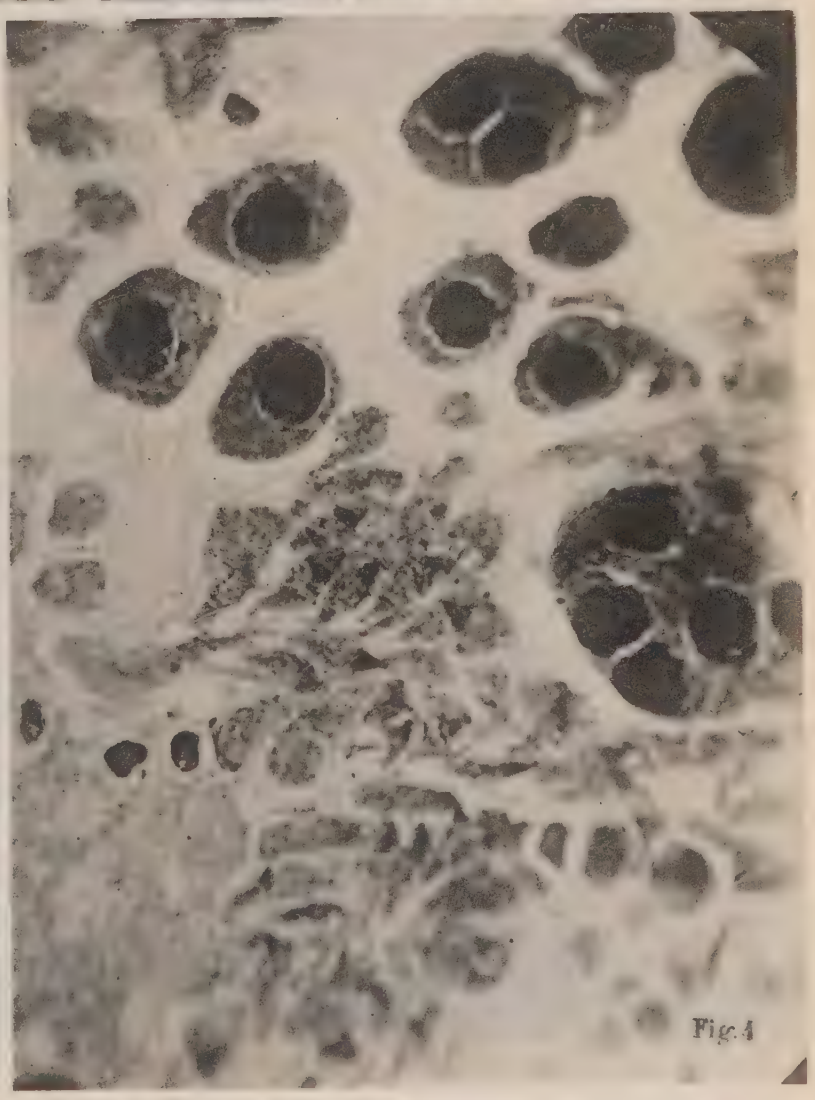

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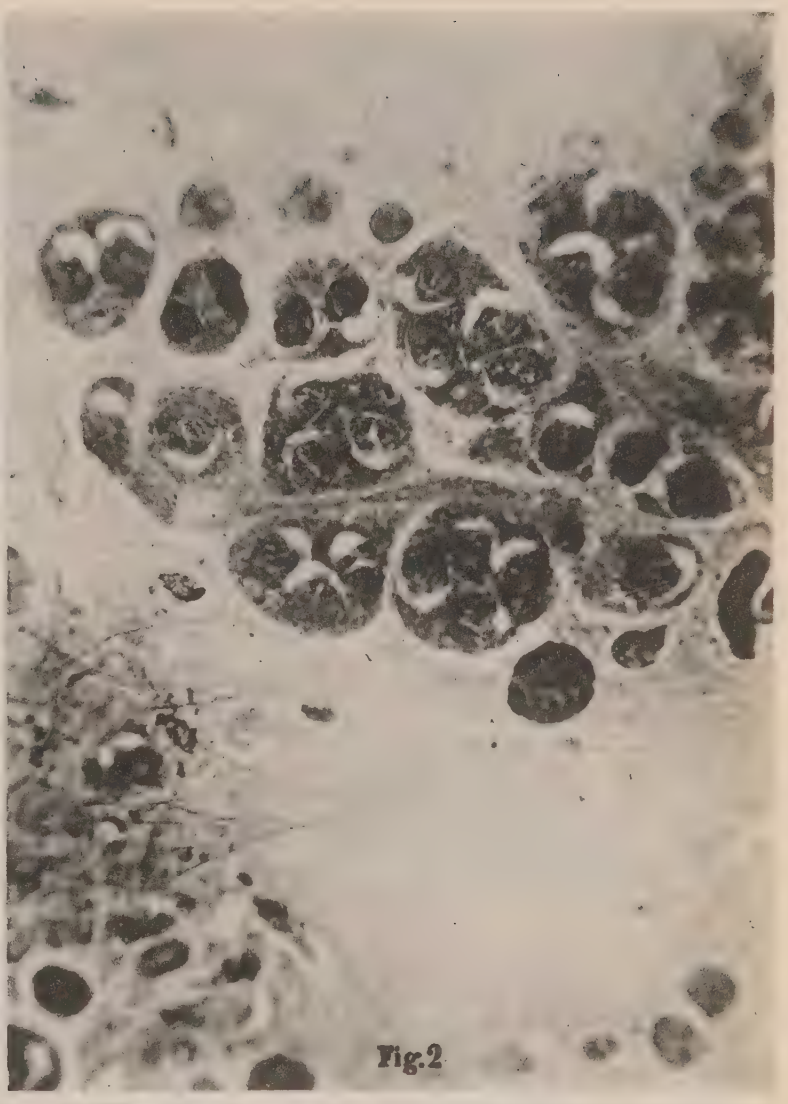

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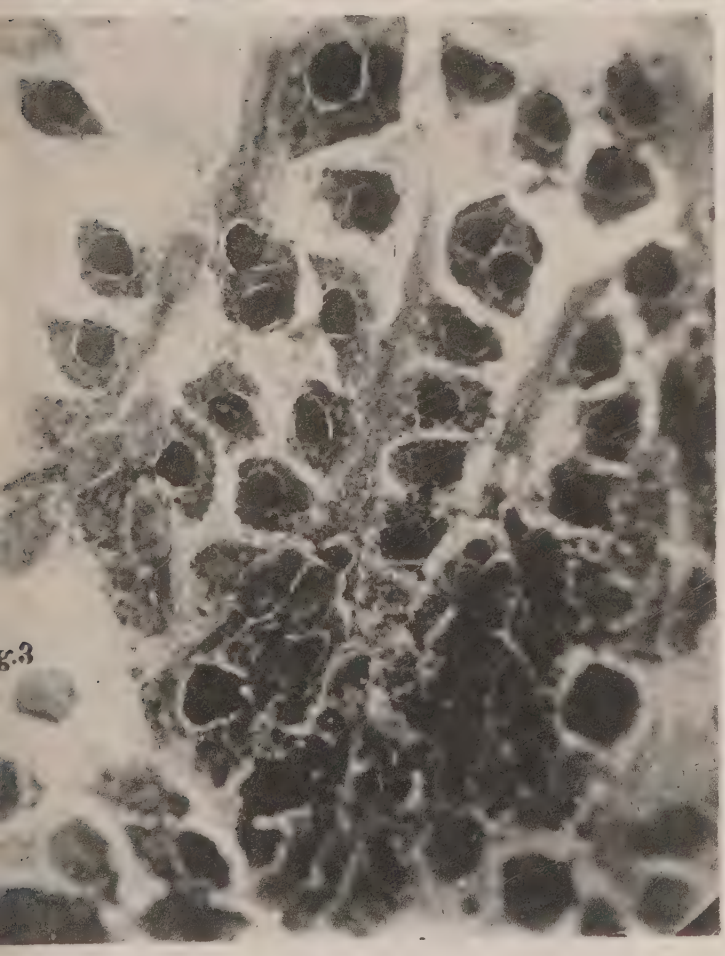

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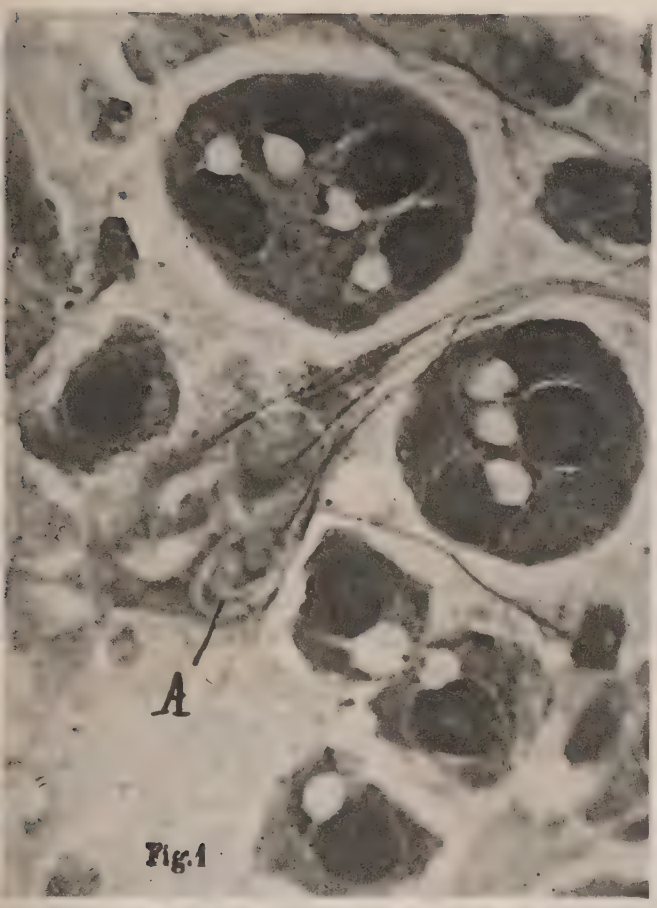

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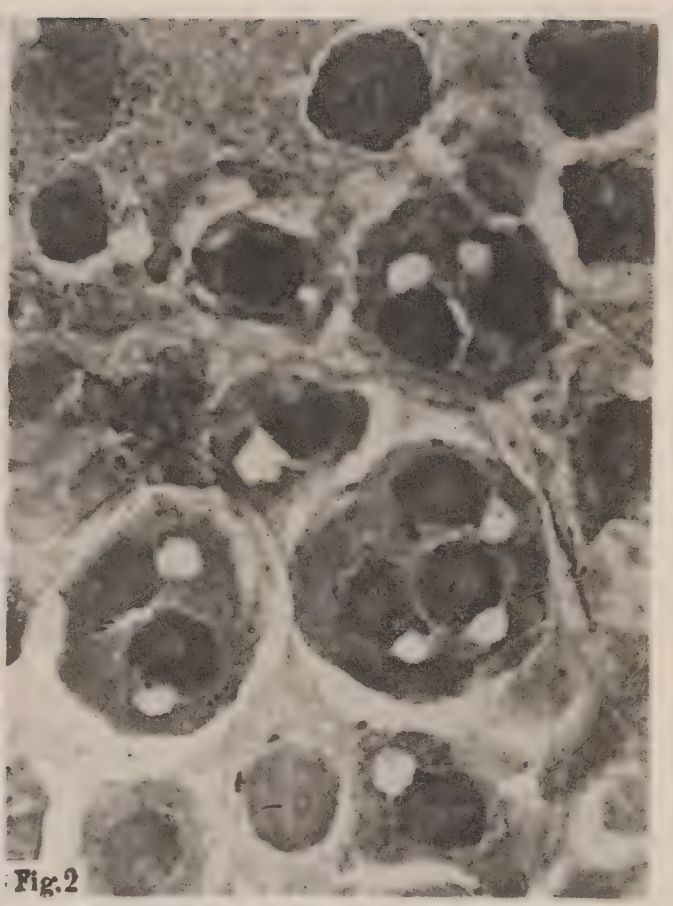

Fig.2

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Fig.6

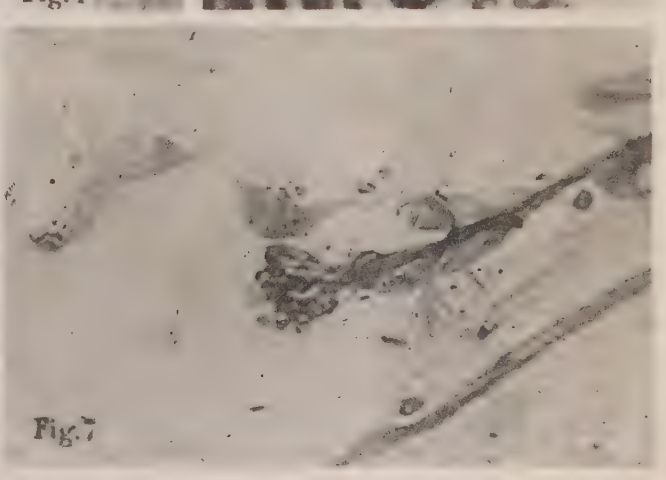

Fig.7

Fig.1

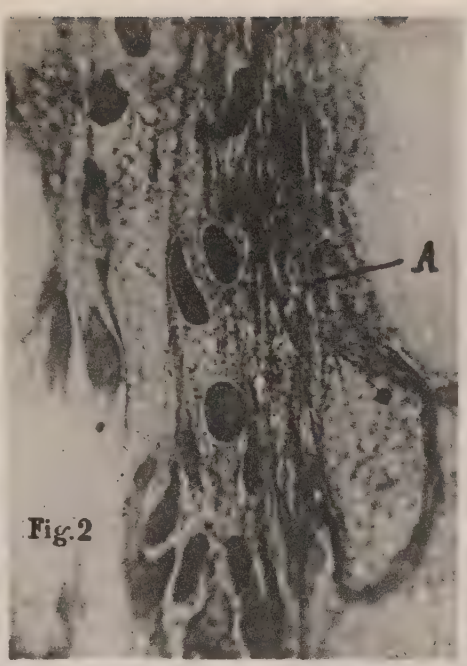

Fig.2

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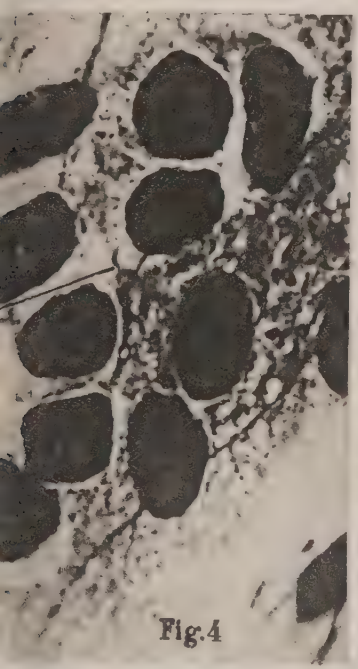
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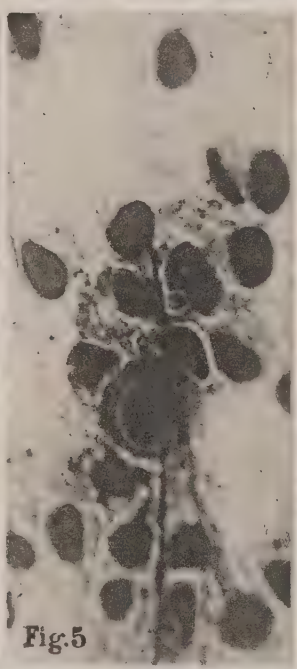
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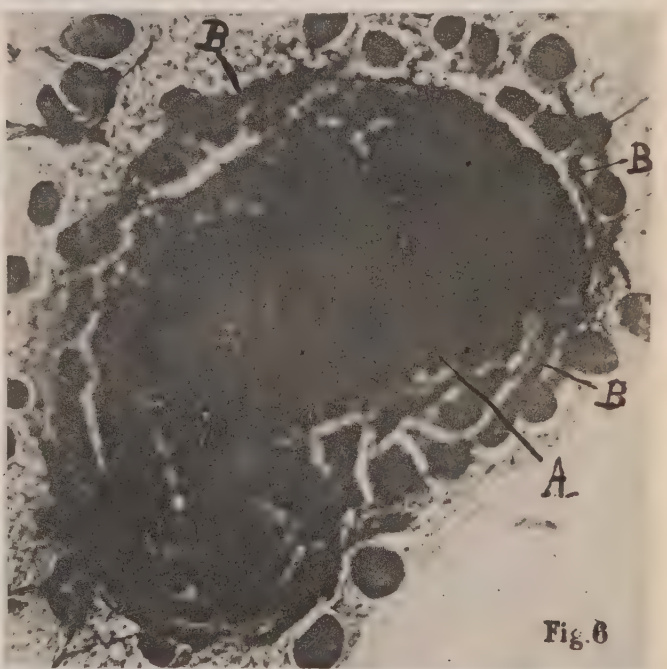

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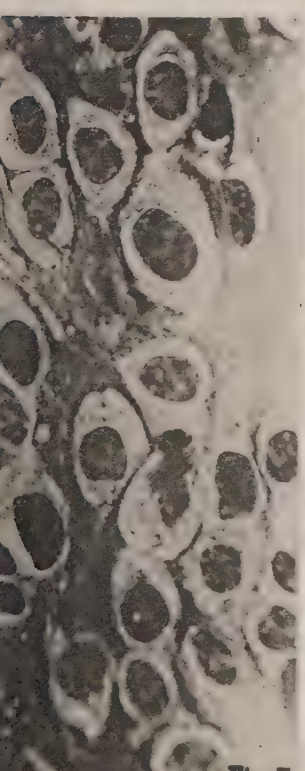
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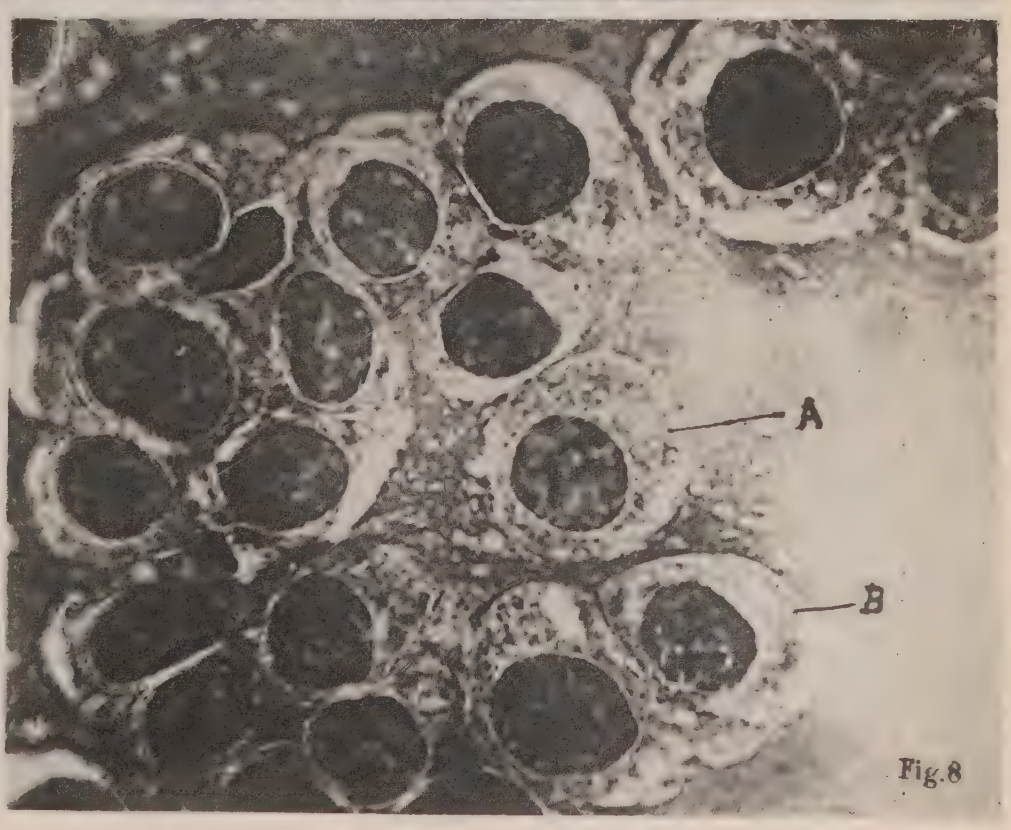

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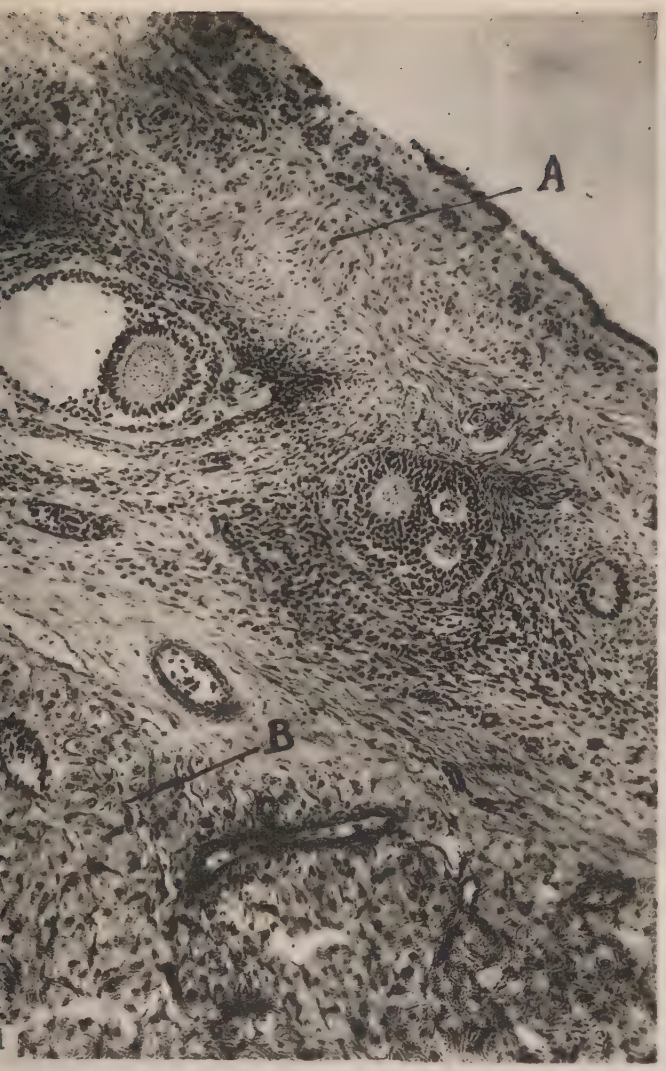

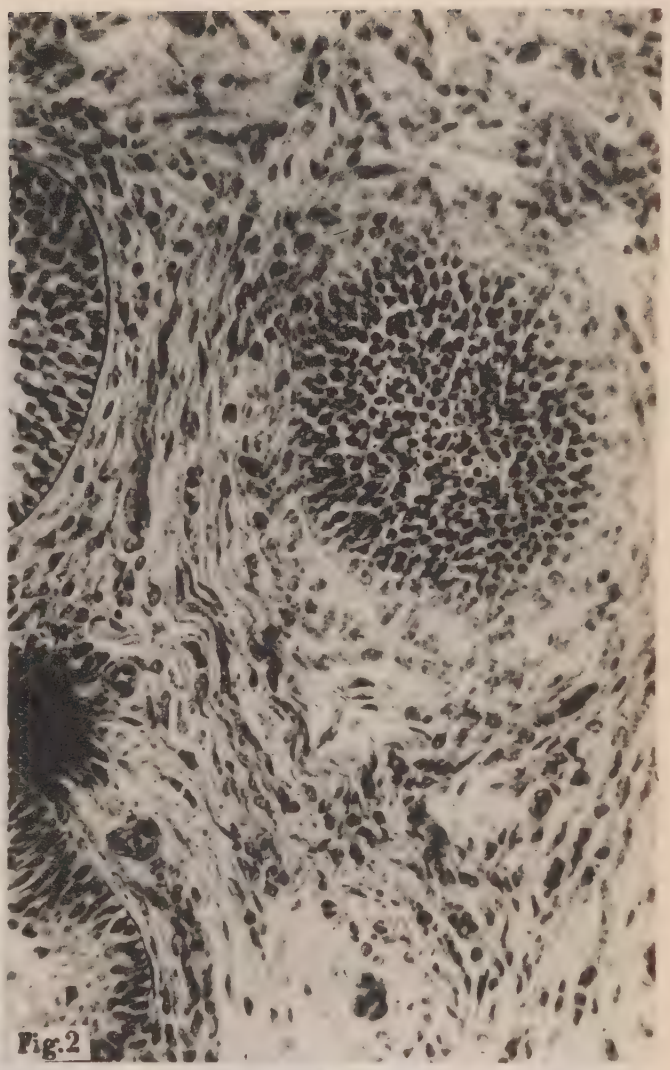

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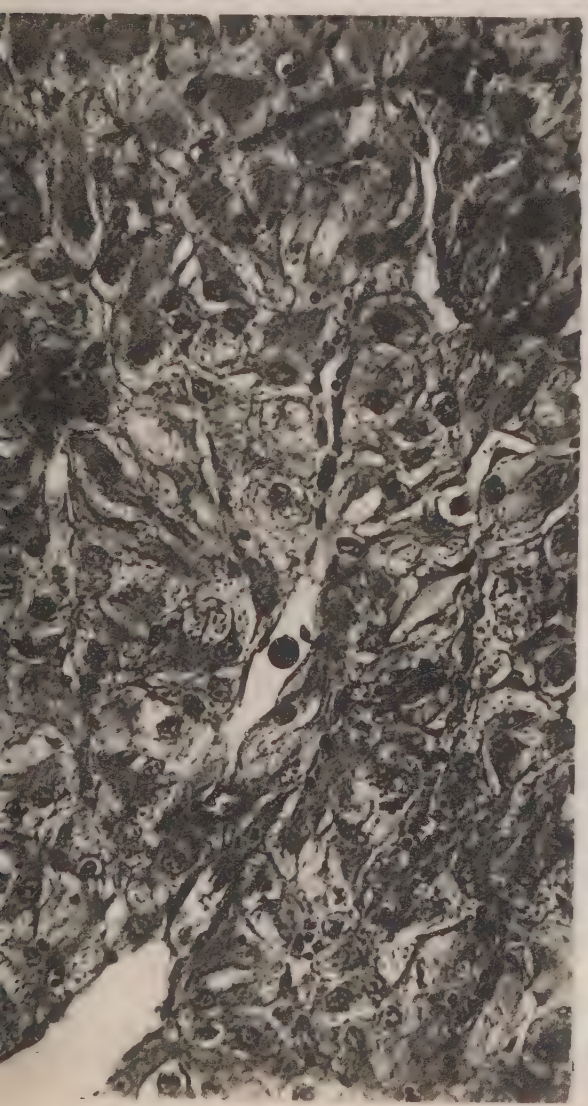

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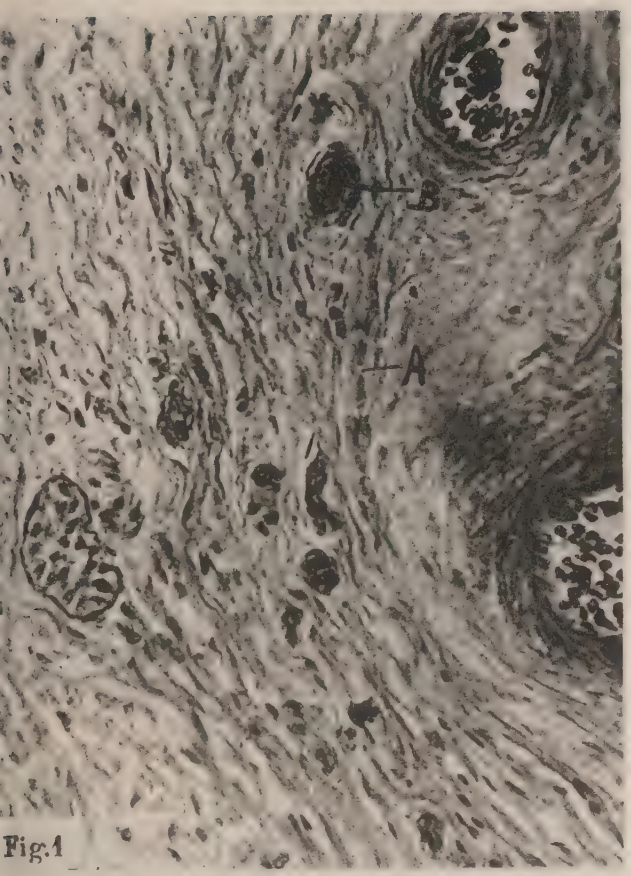

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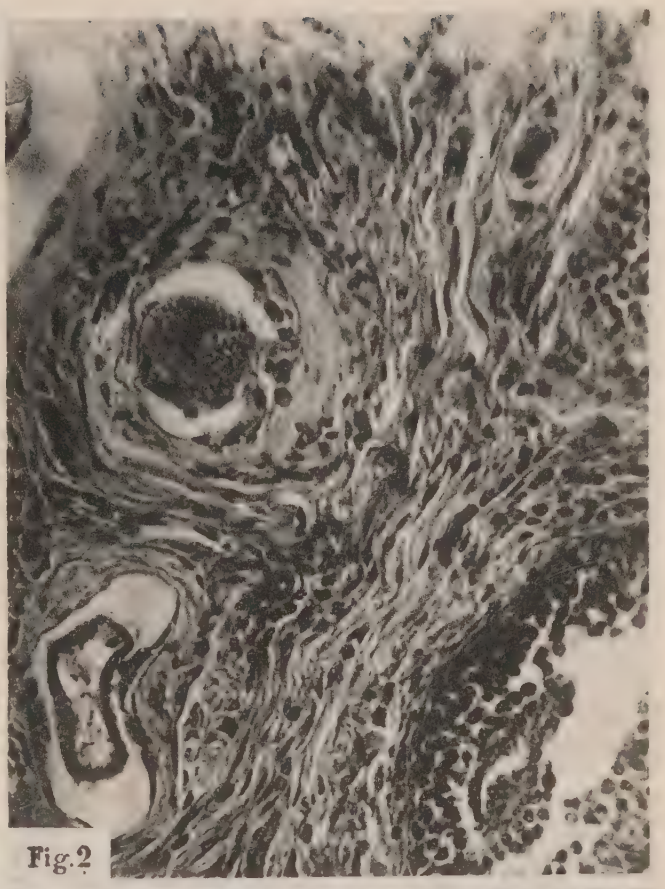

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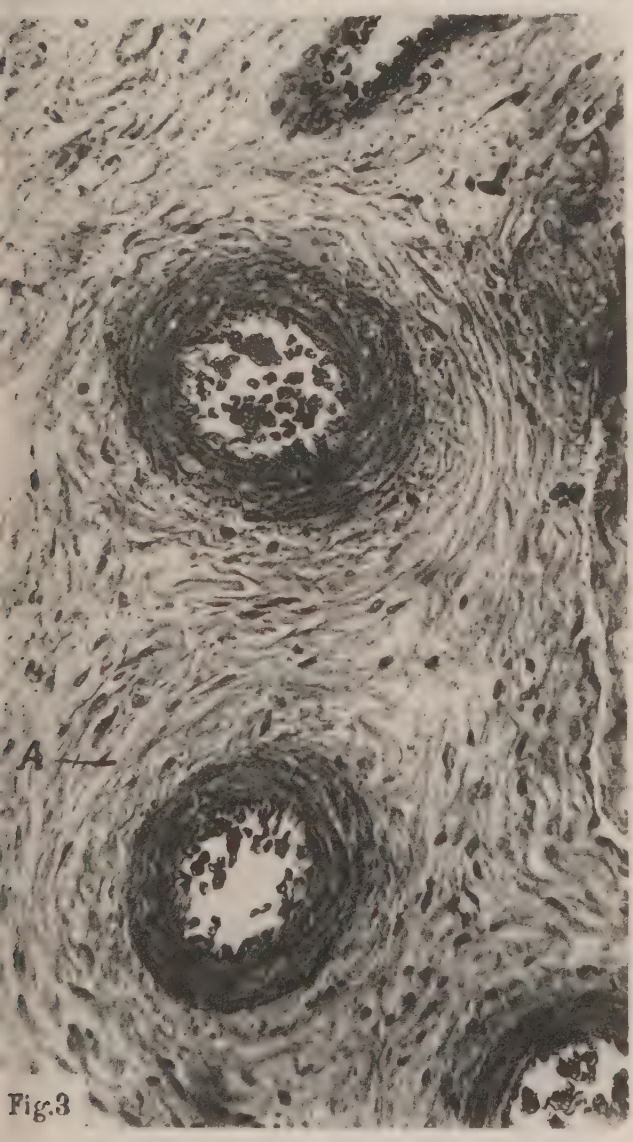

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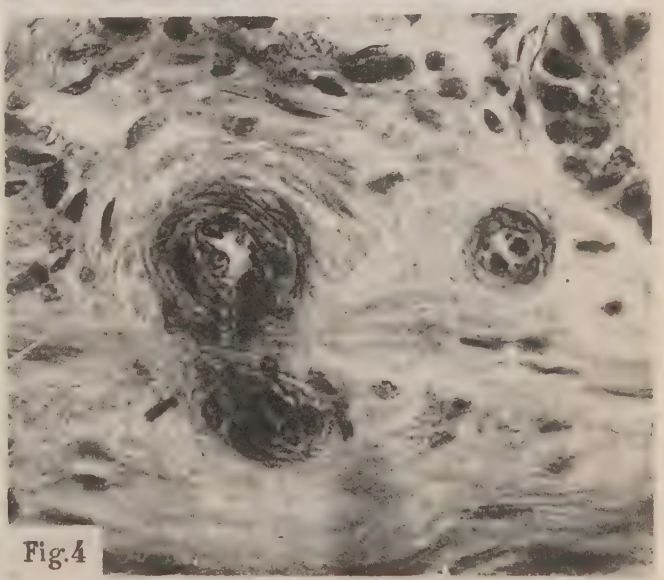

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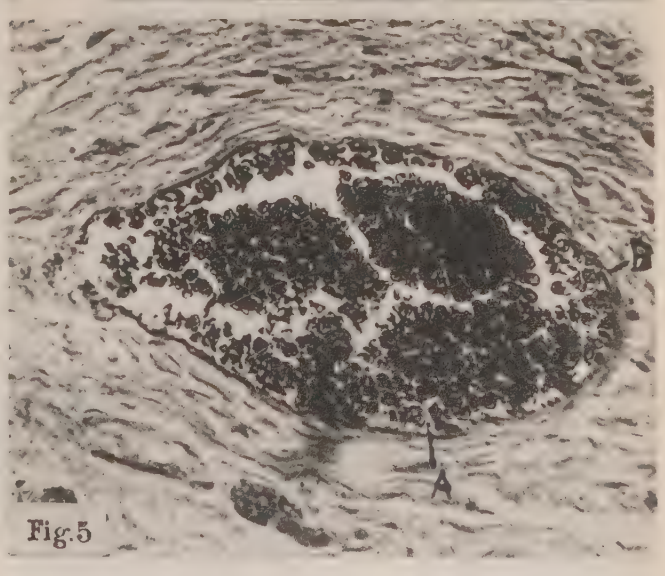

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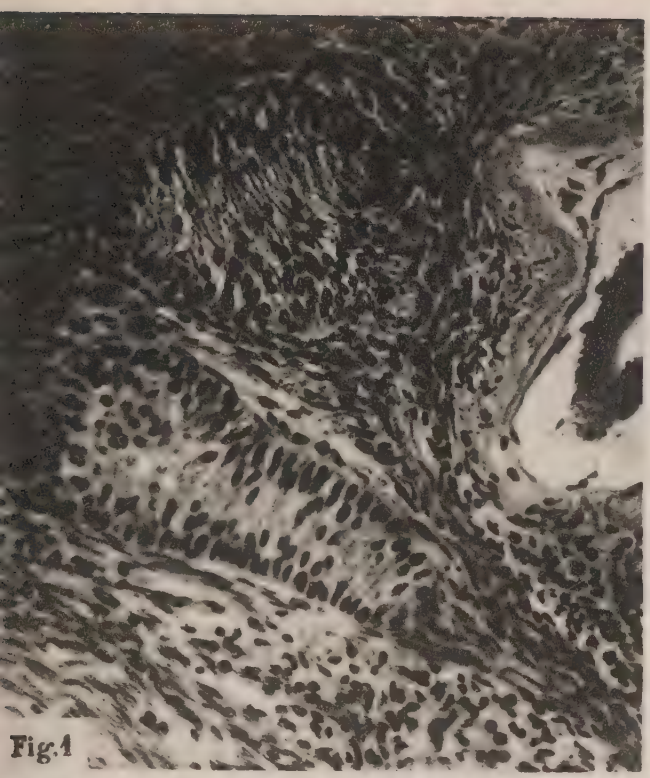

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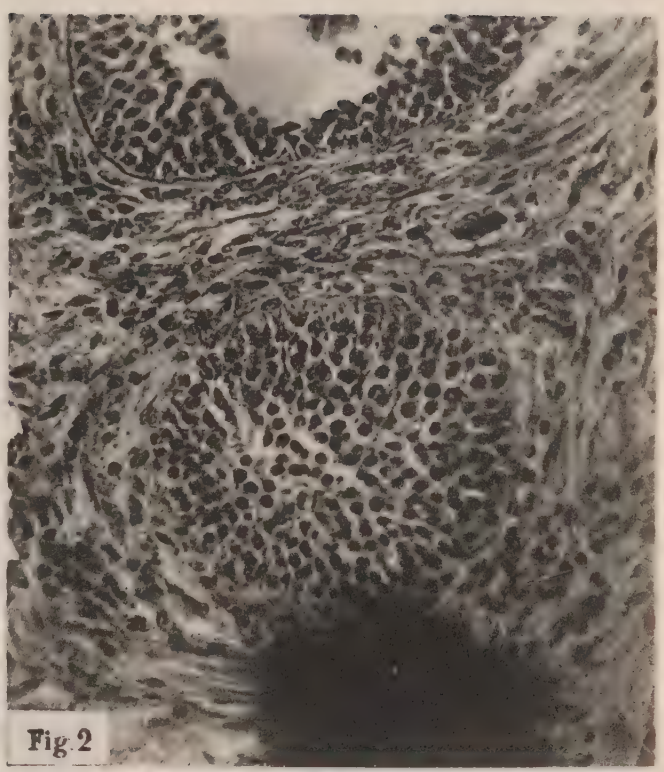

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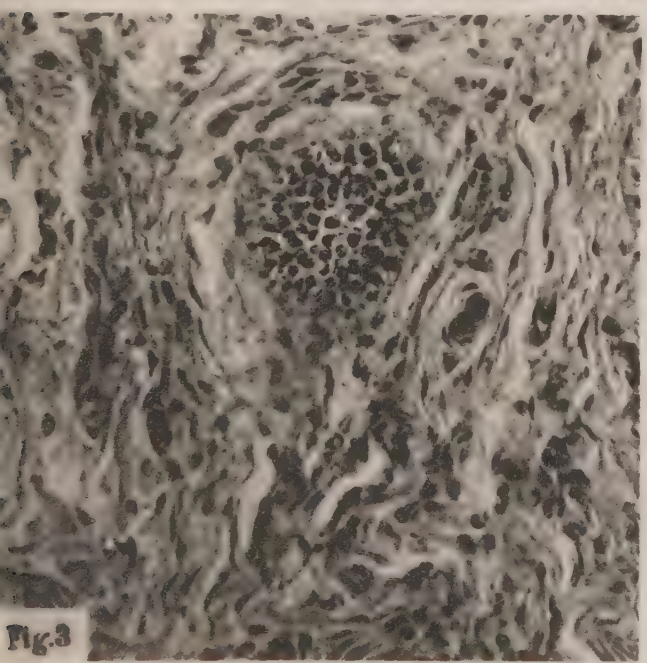

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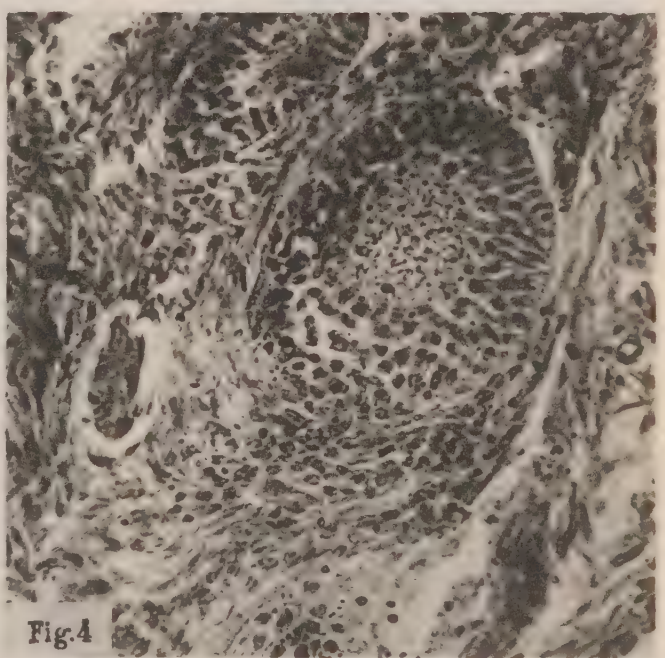

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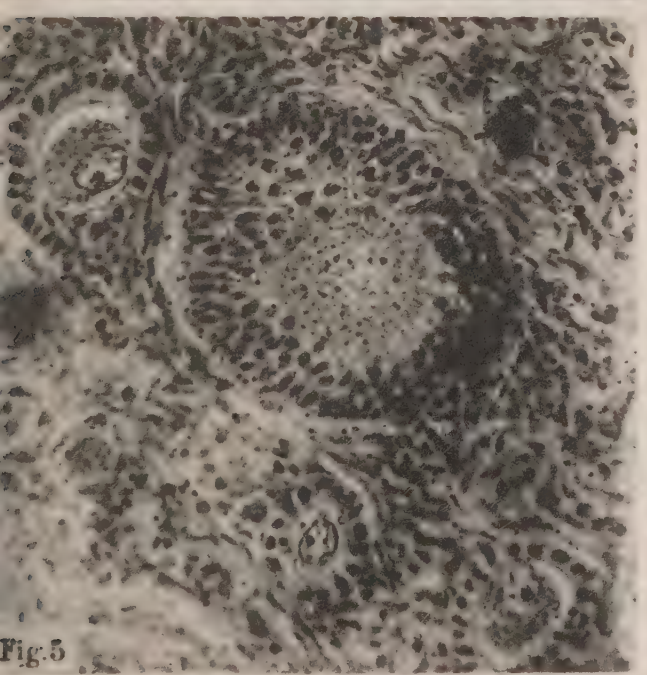

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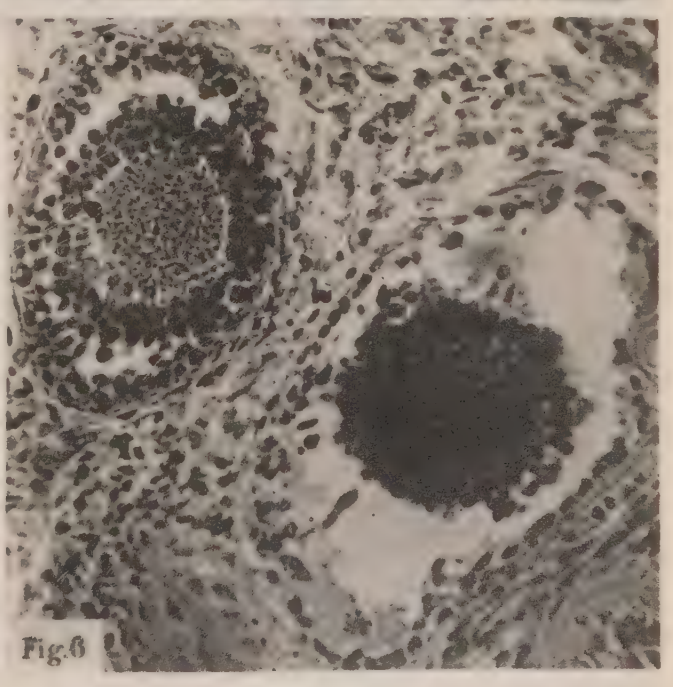

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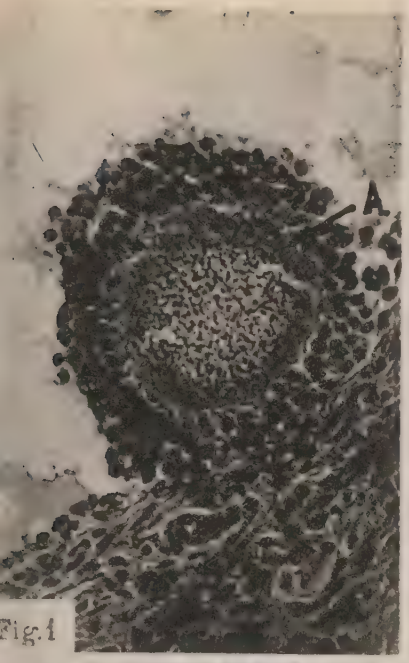

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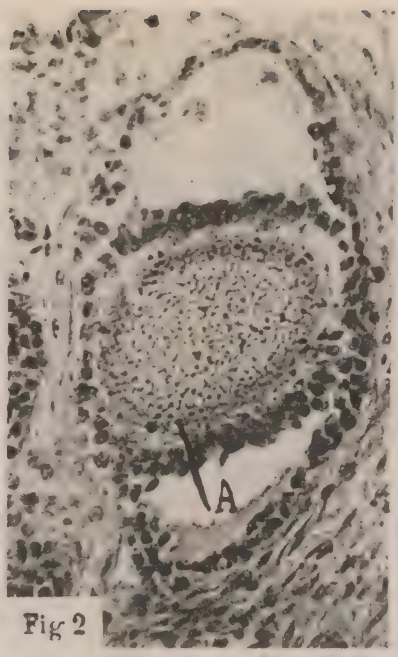

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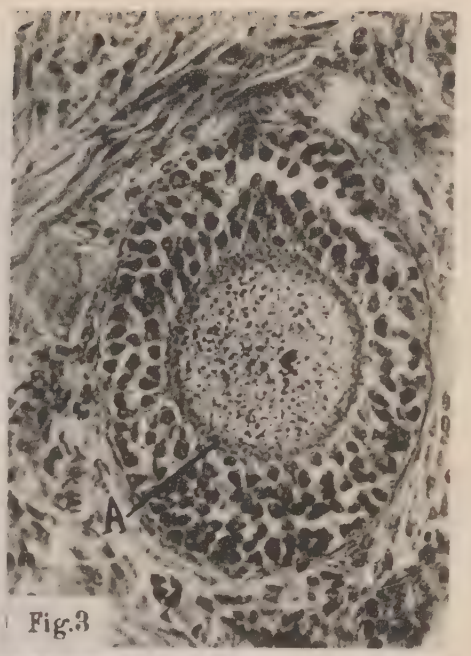

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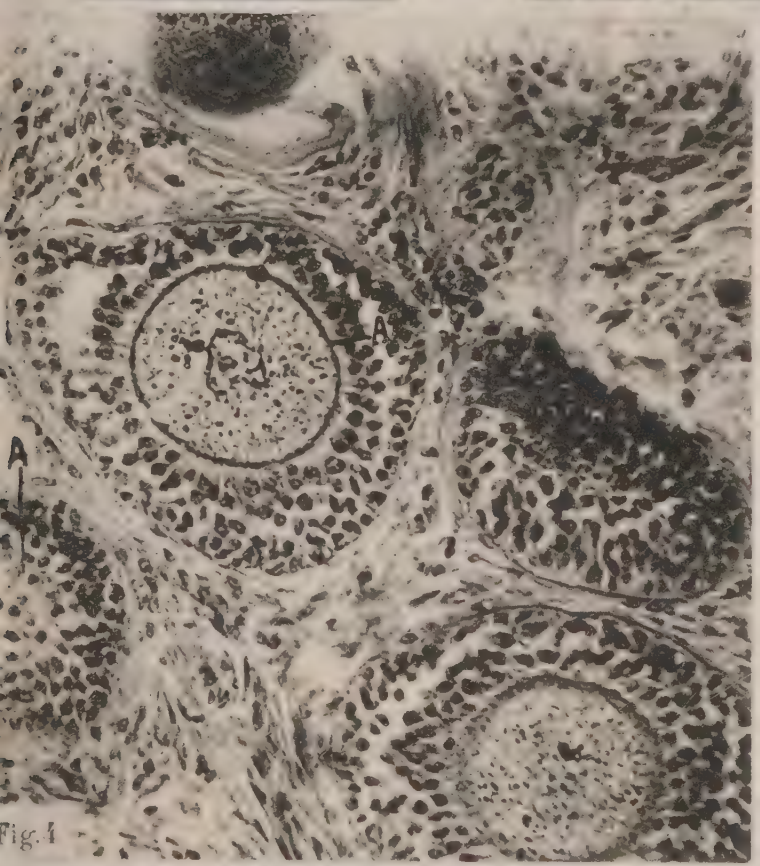

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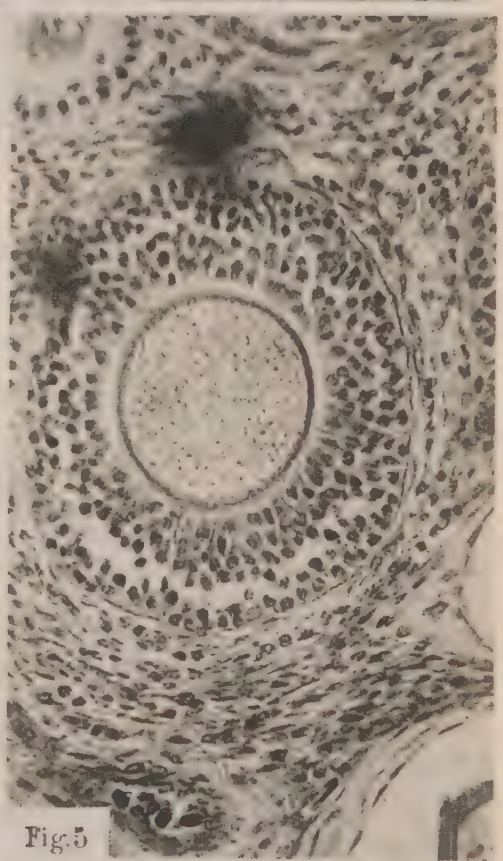

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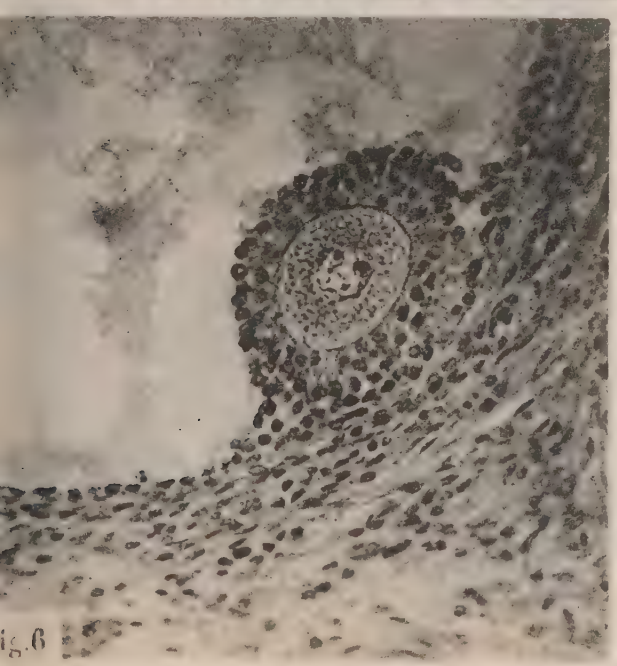

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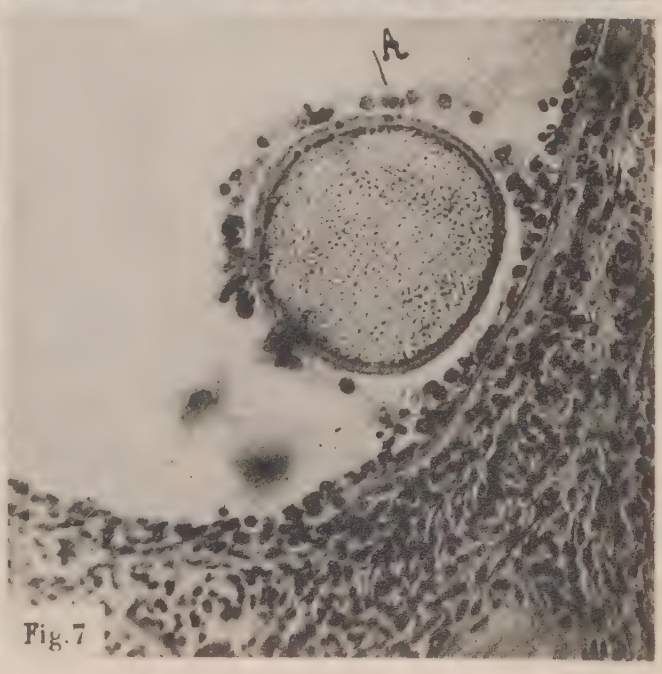

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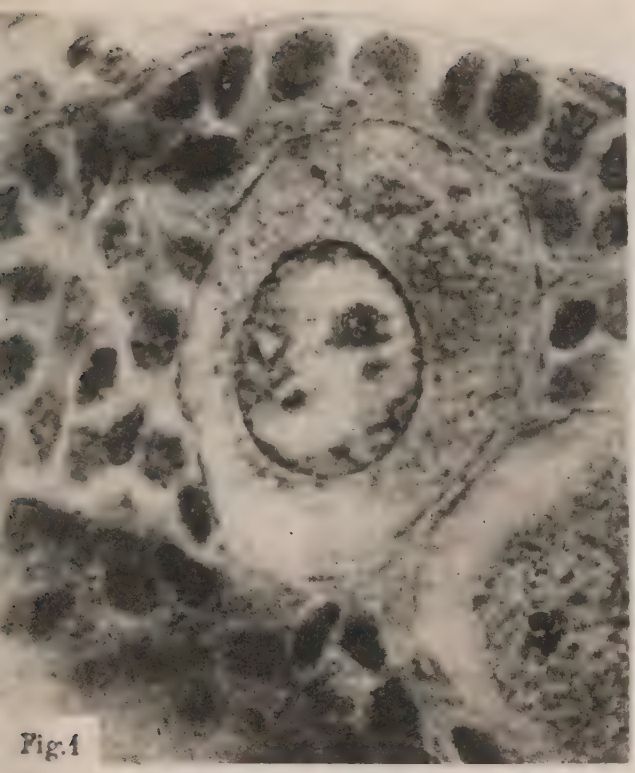

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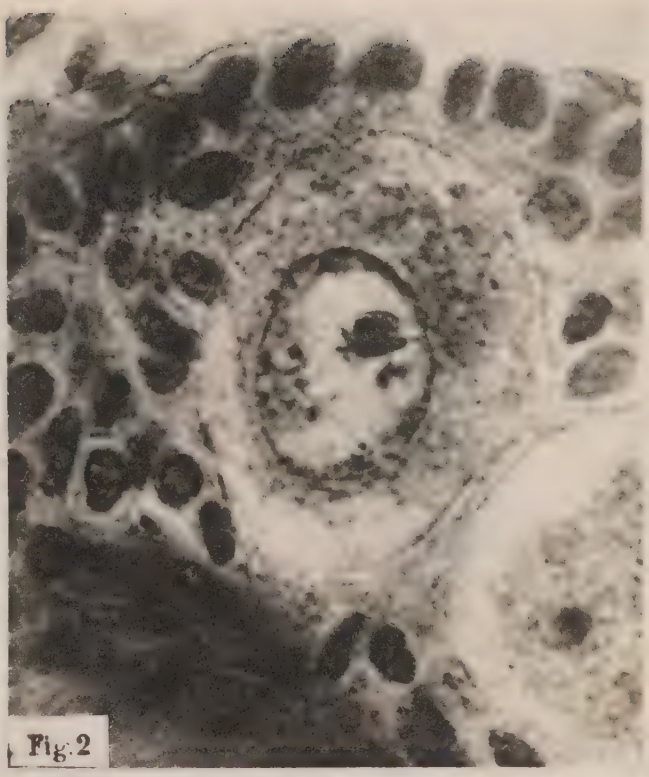

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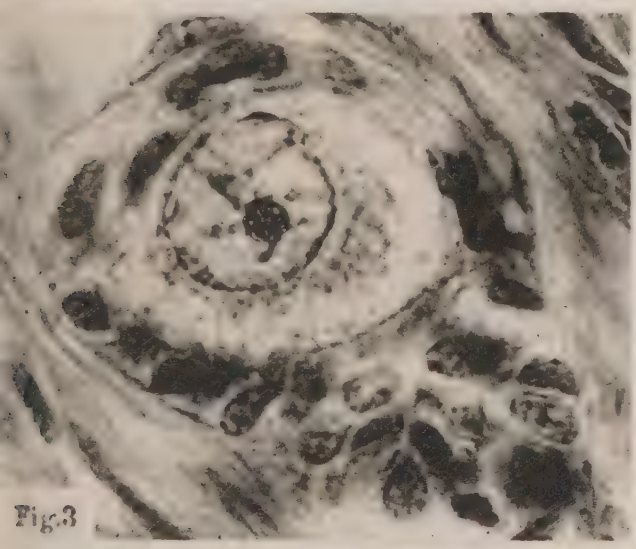

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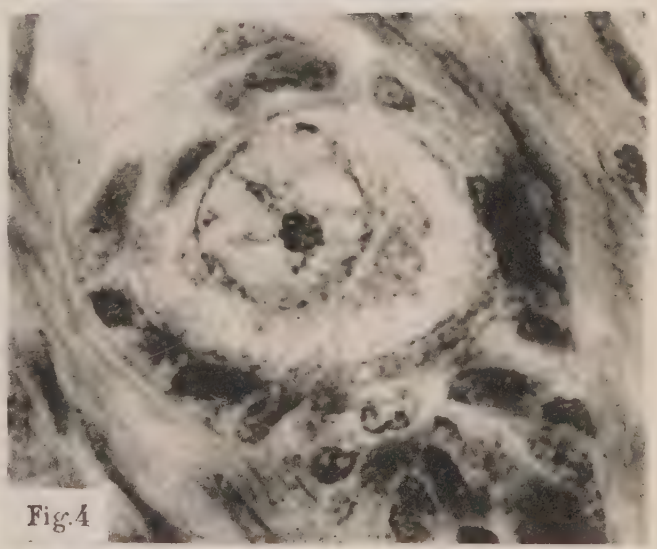

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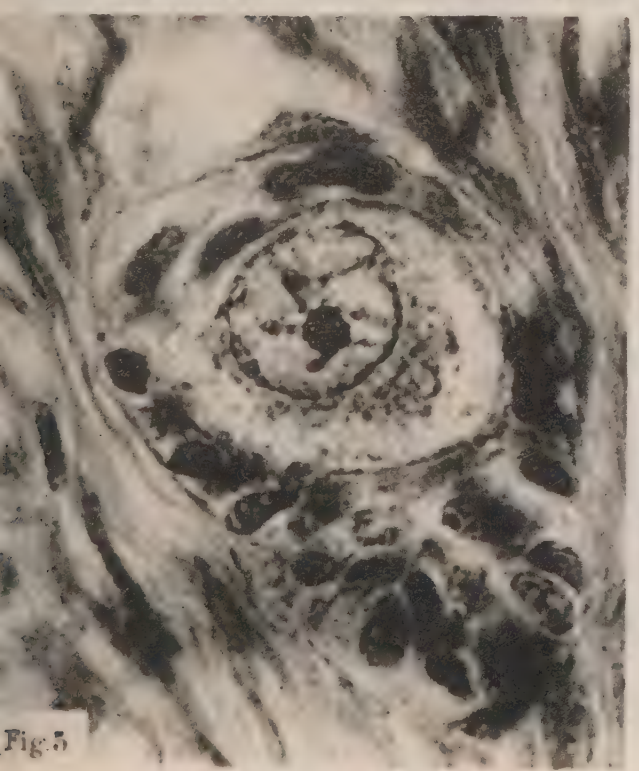

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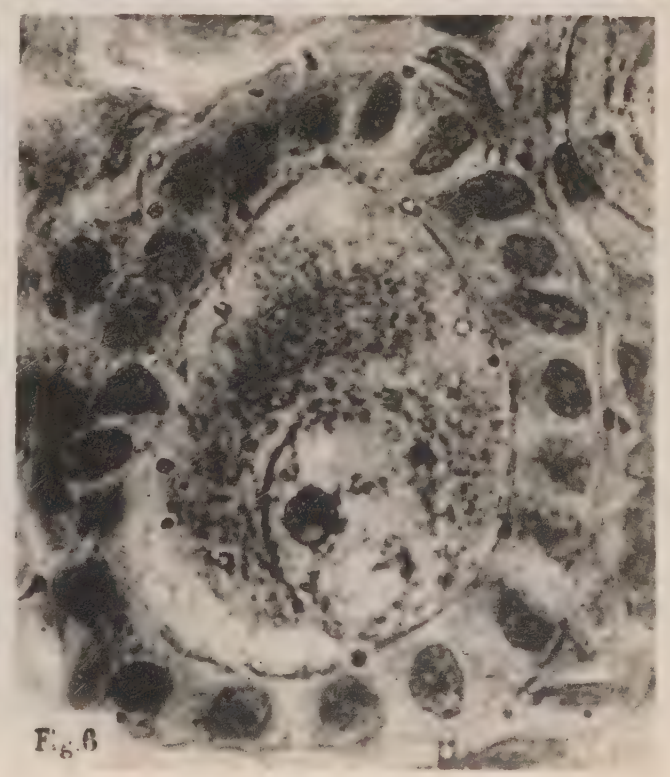

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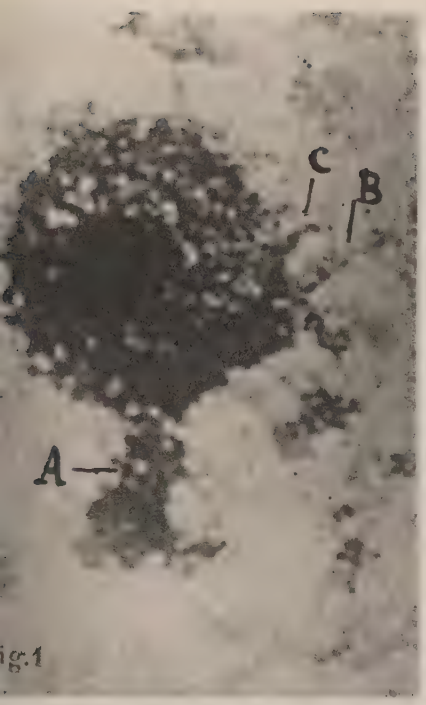

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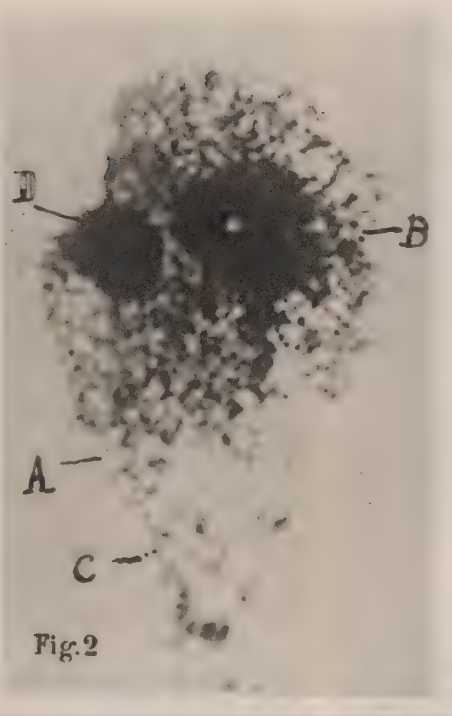

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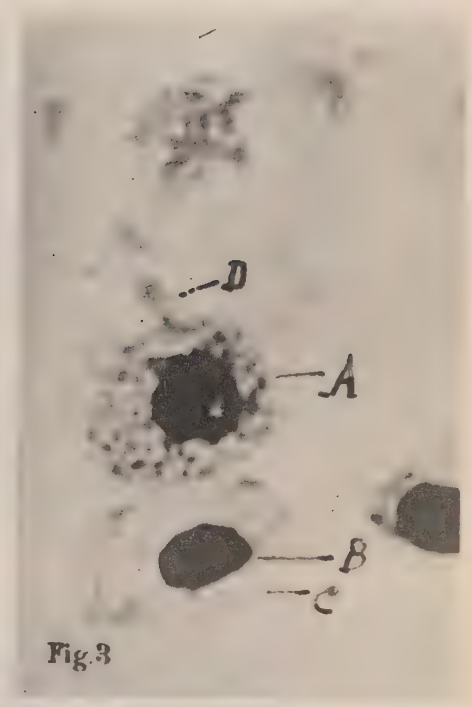

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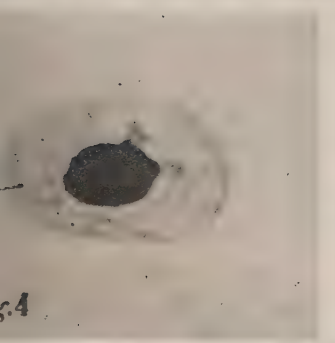

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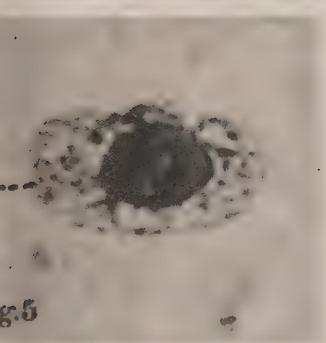

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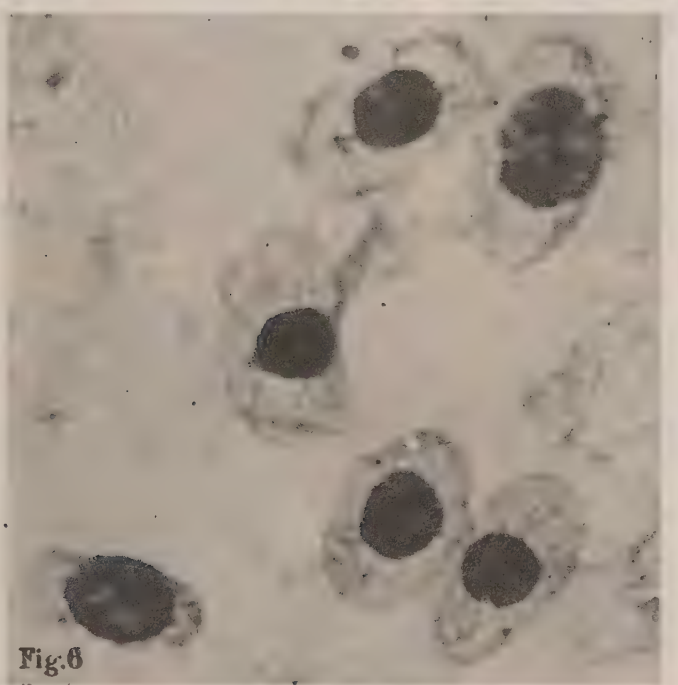

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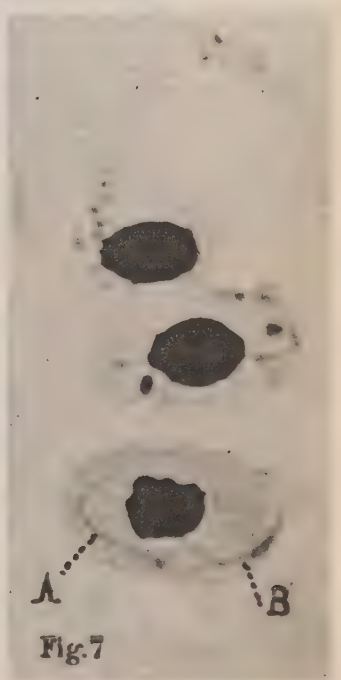

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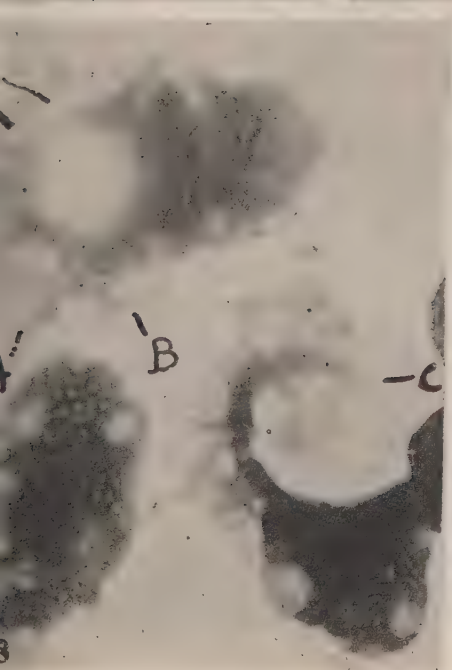

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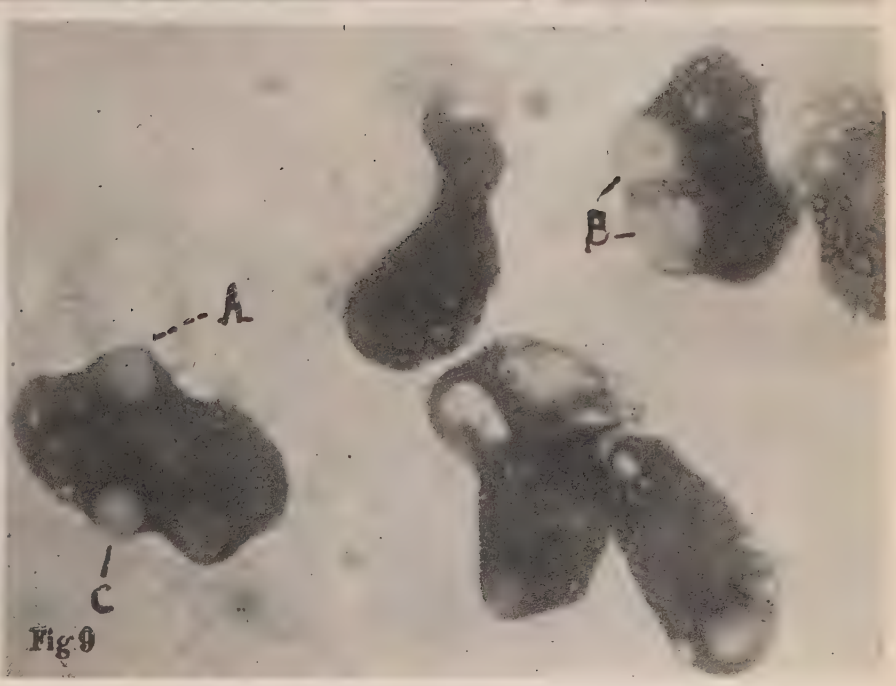

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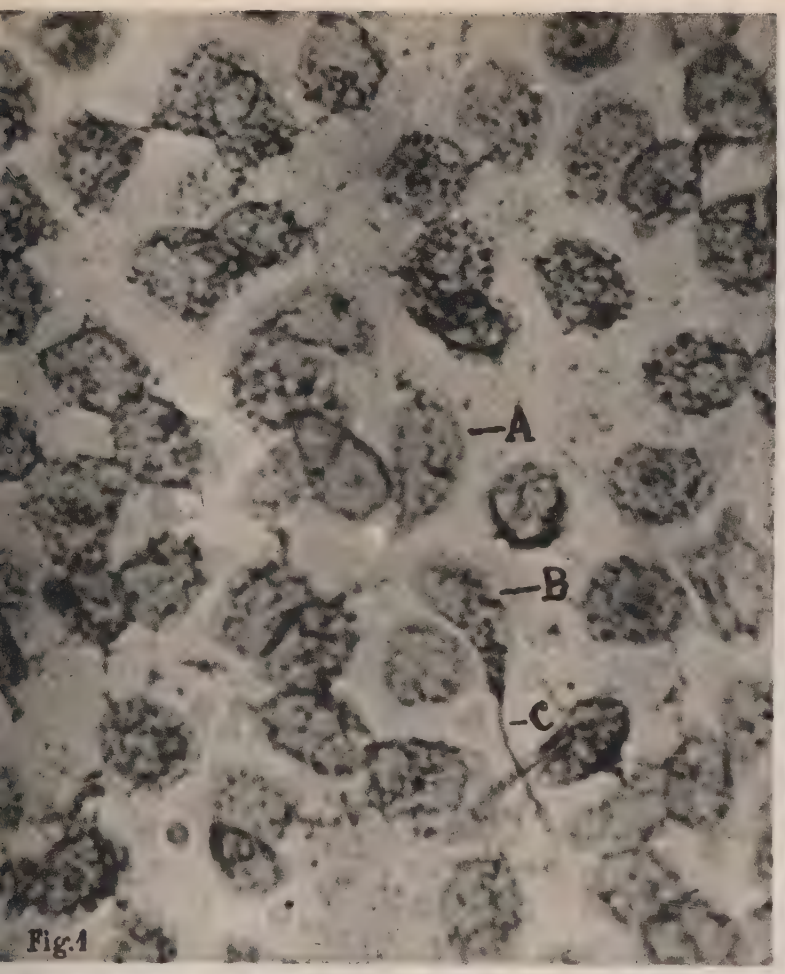
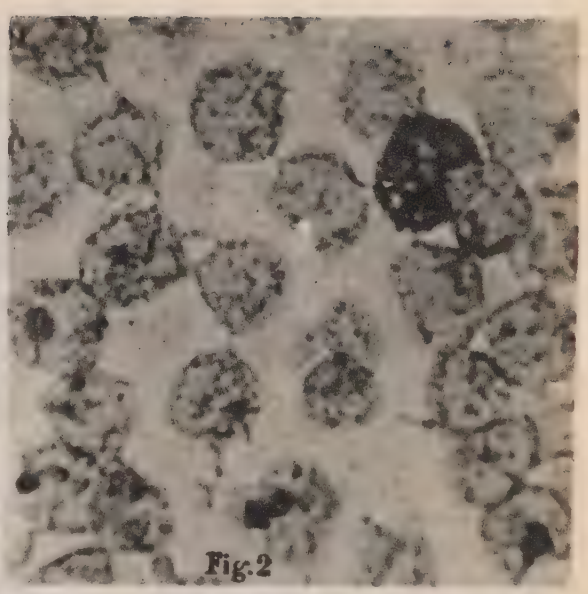


Fig.1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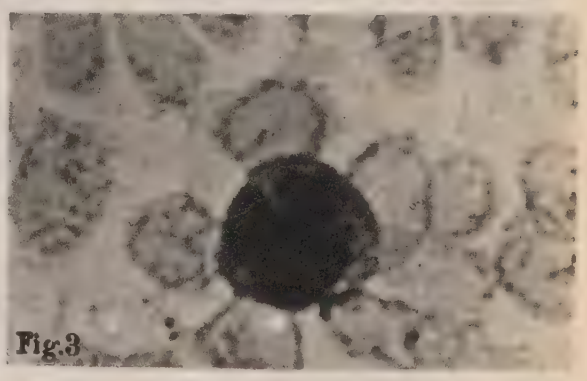
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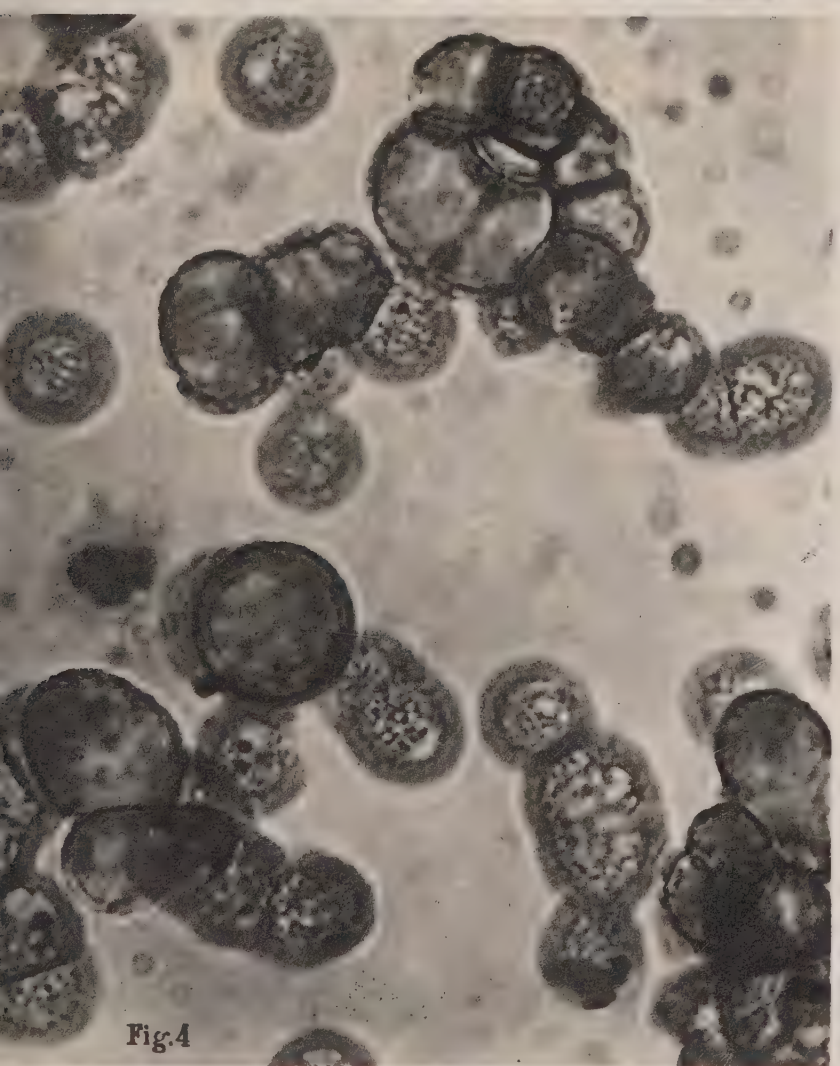
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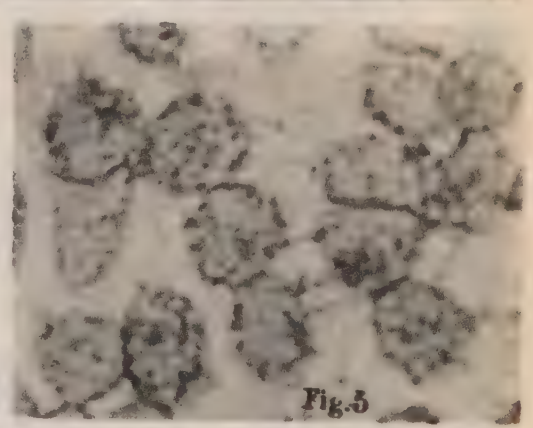
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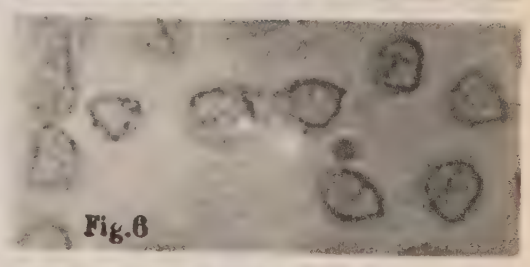
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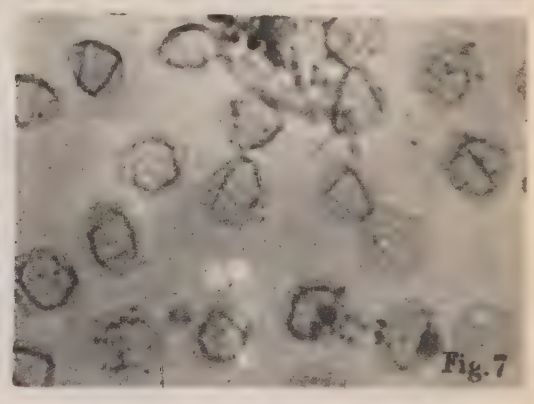
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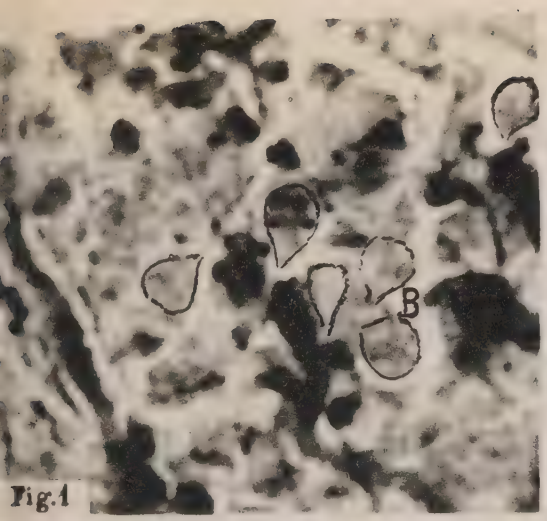

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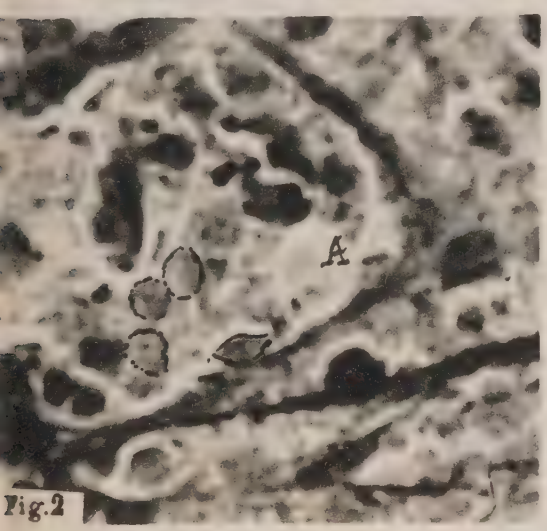

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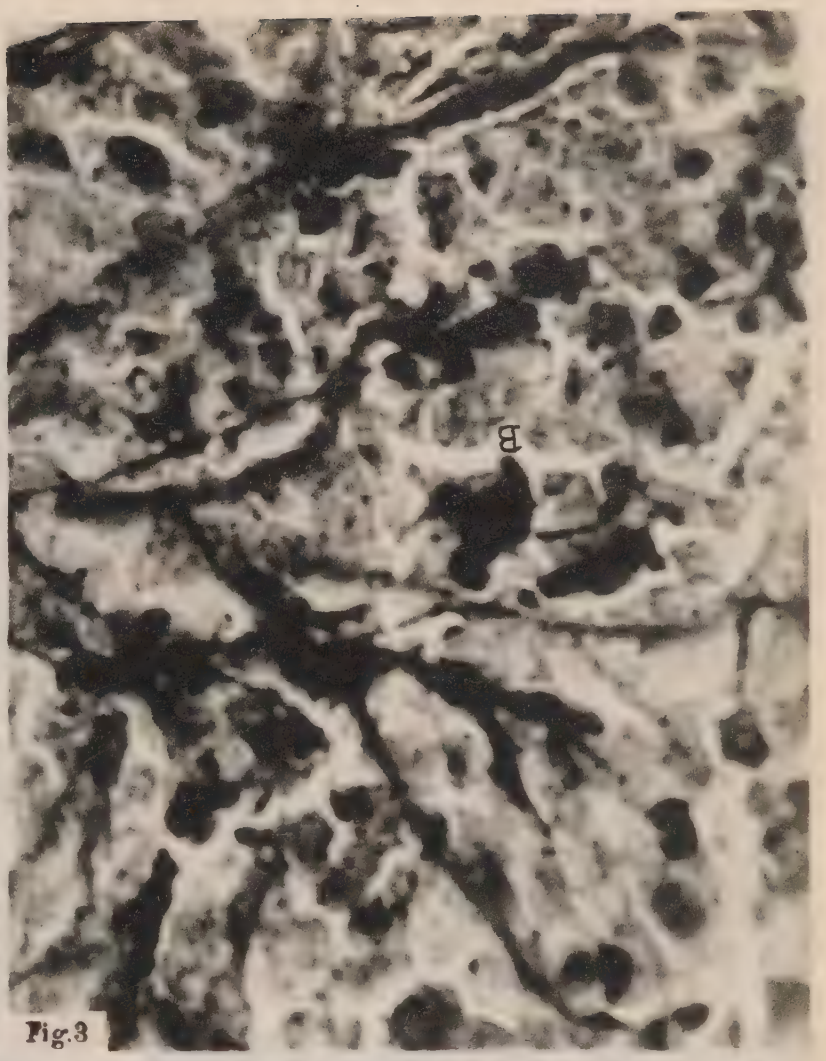

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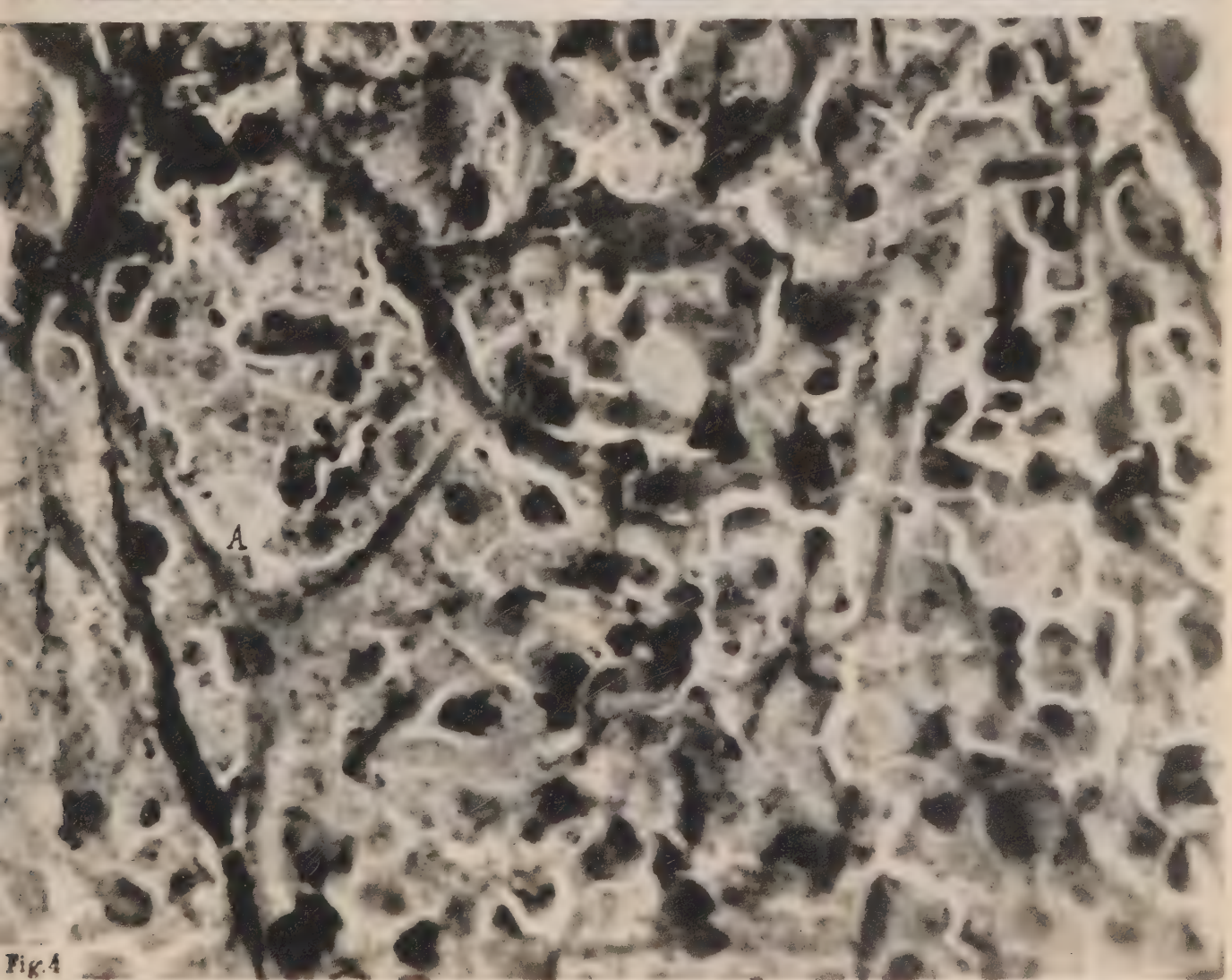

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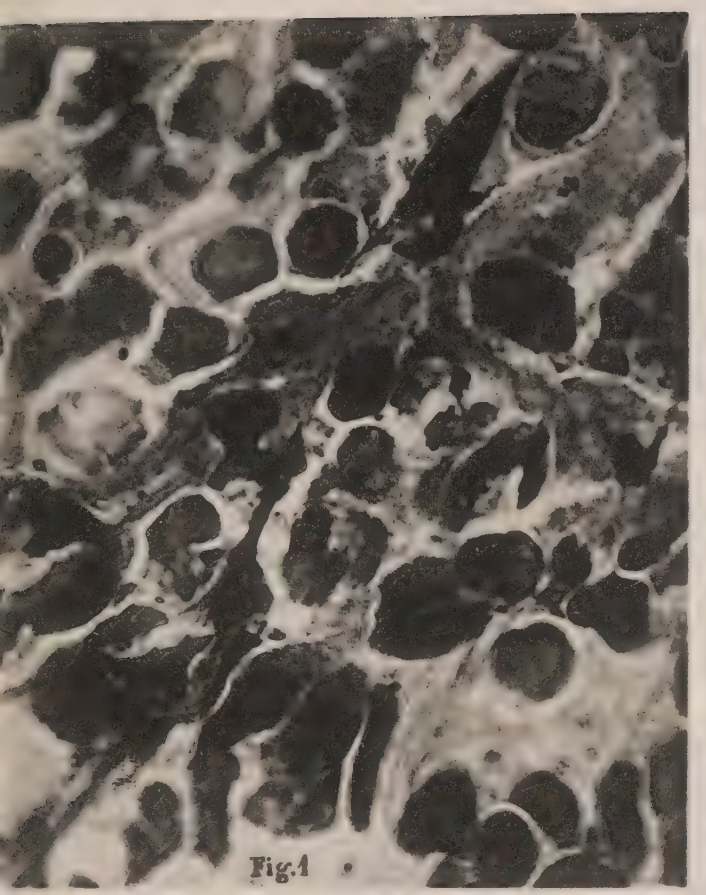
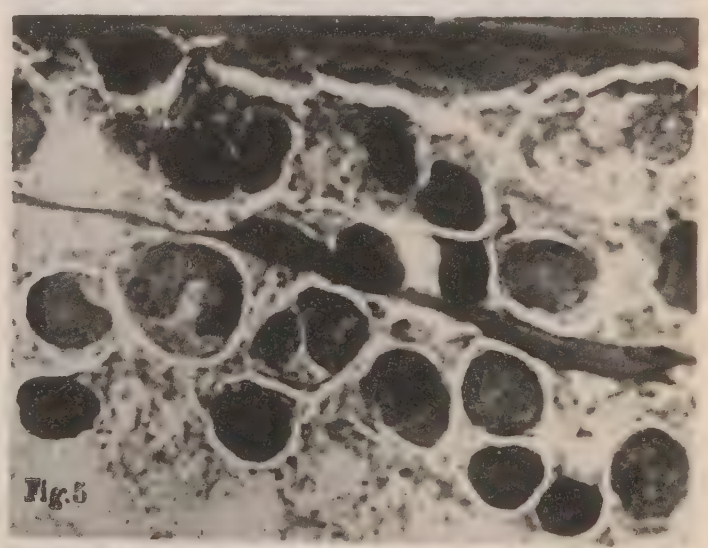


Fig.1

Fig.2

Fig.3

Fig.4



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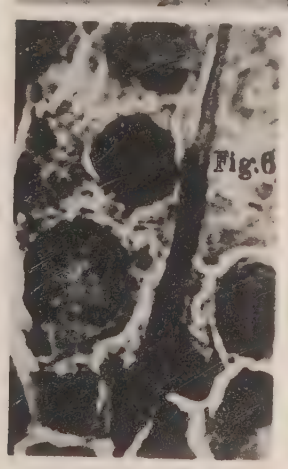

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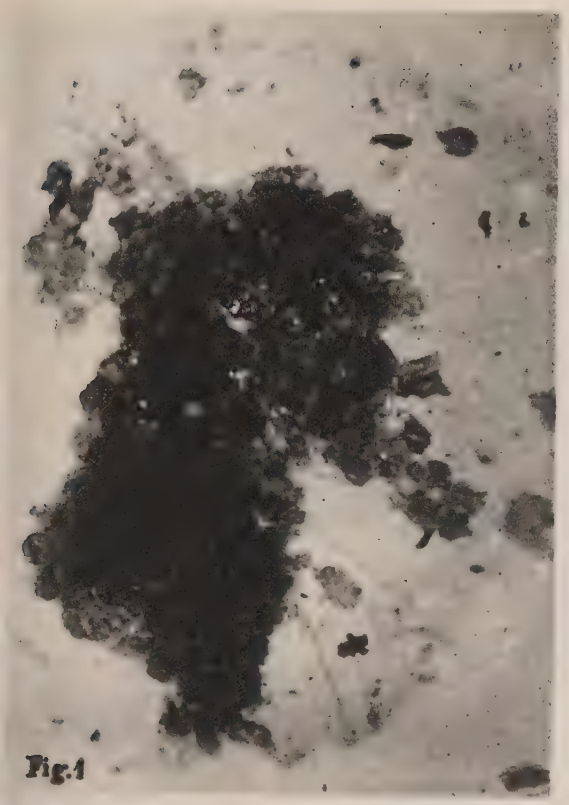
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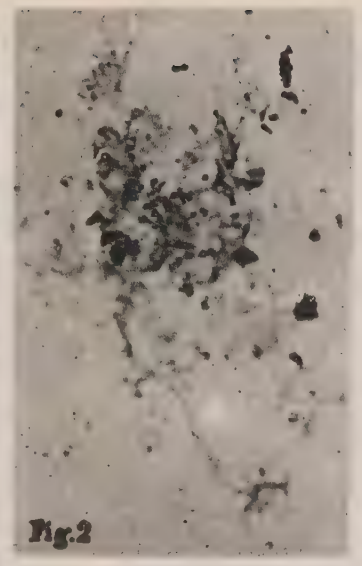
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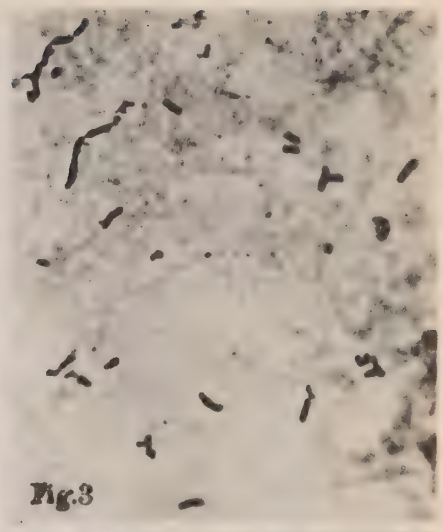
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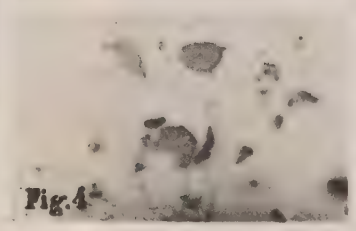
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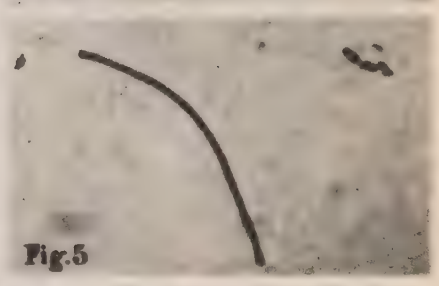
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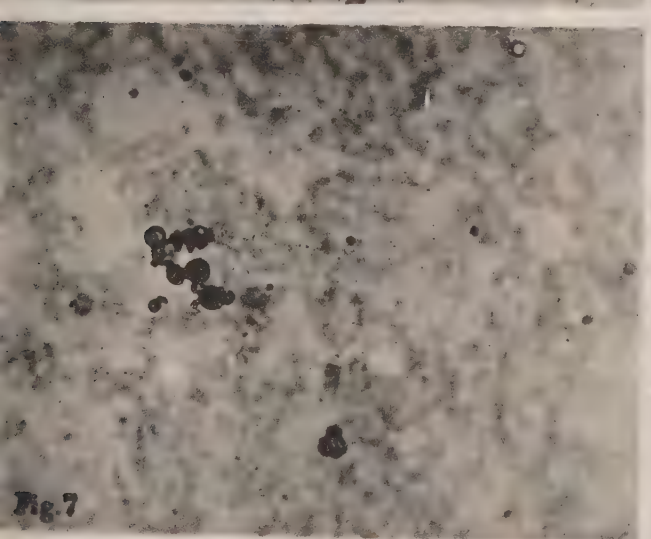
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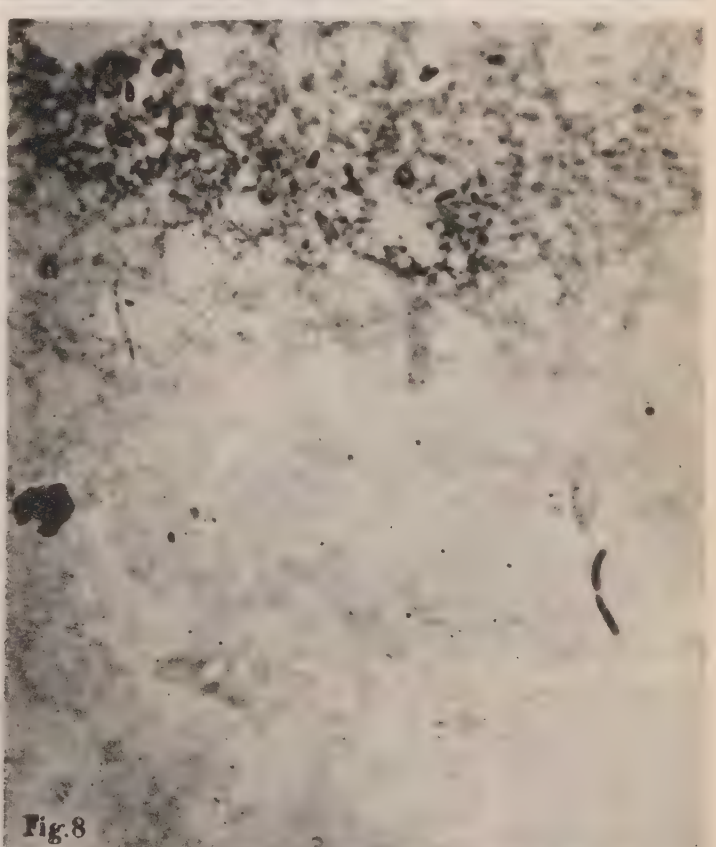
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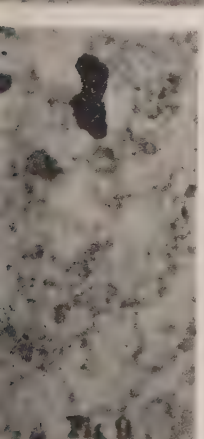
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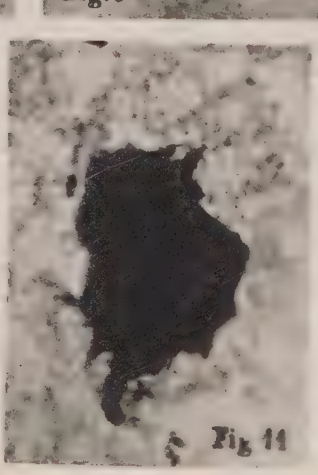
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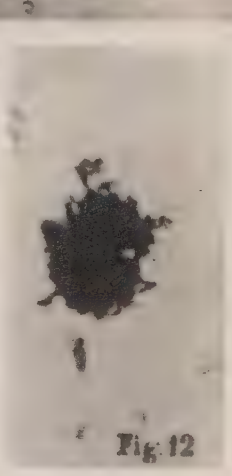
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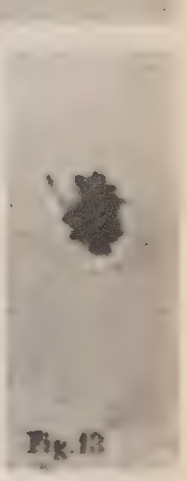
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Fig.1

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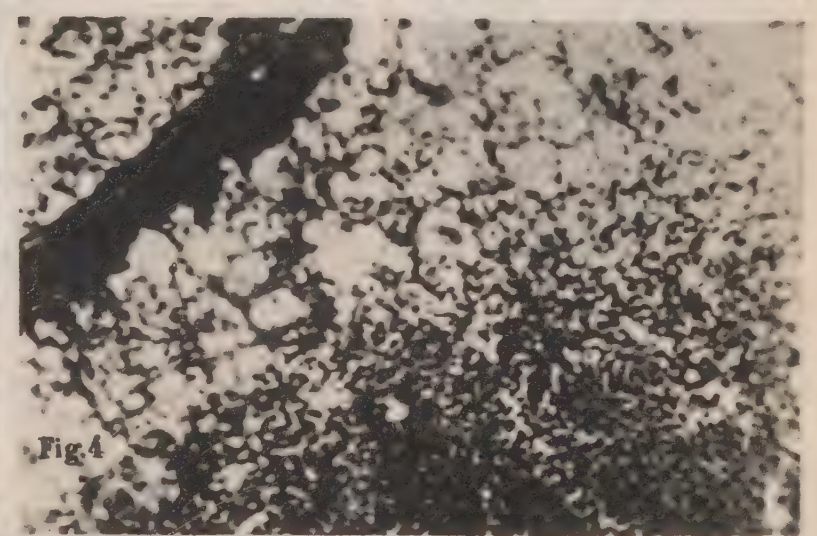

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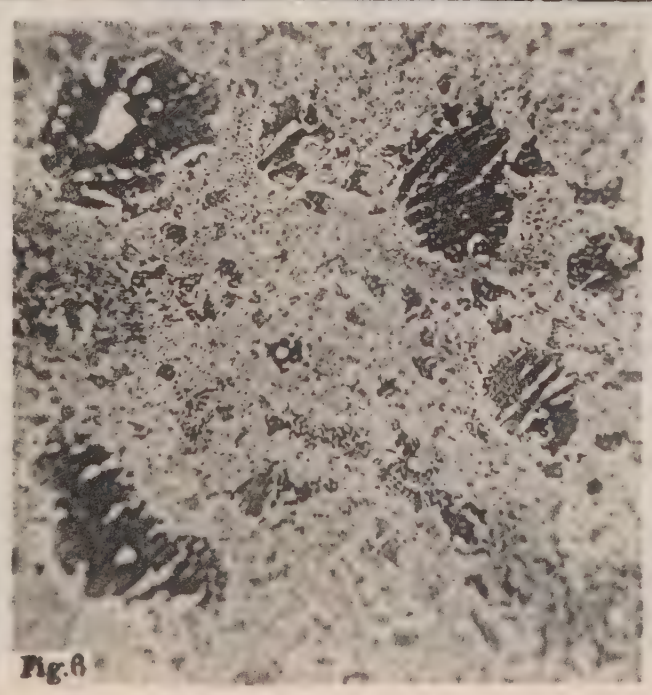

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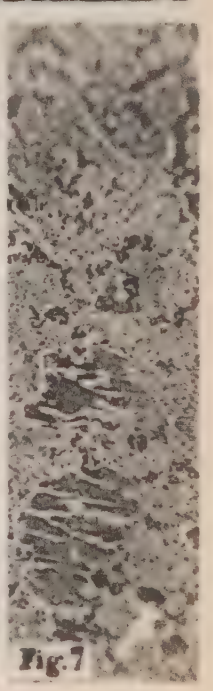

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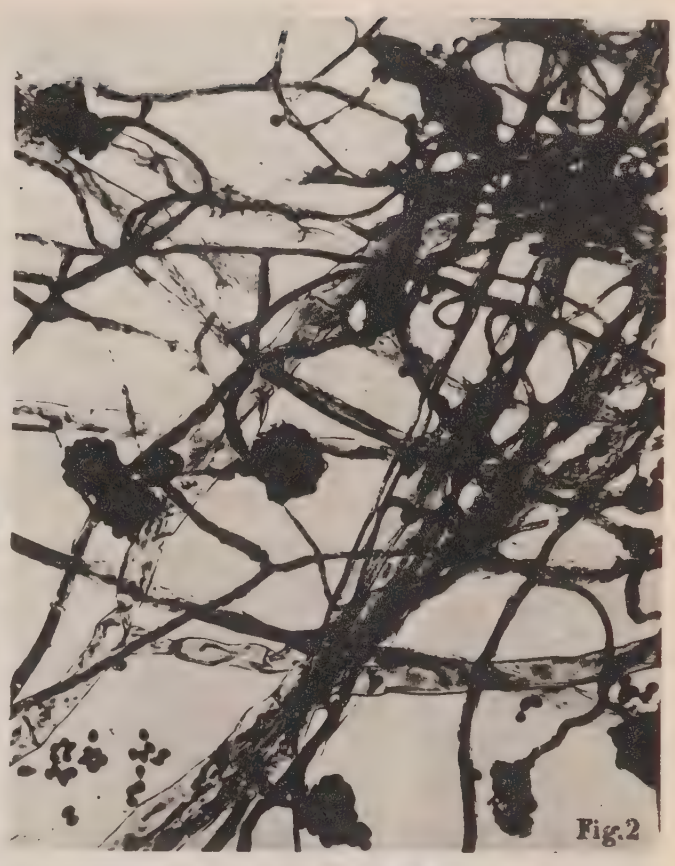

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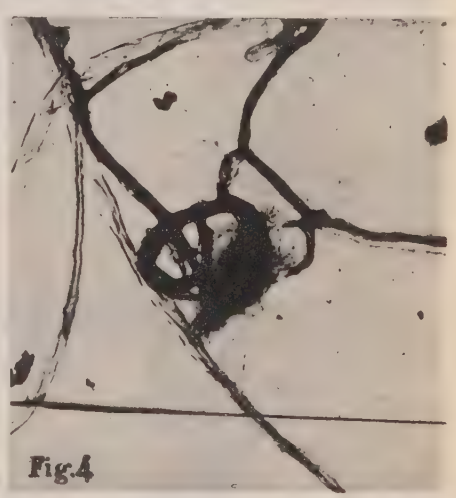

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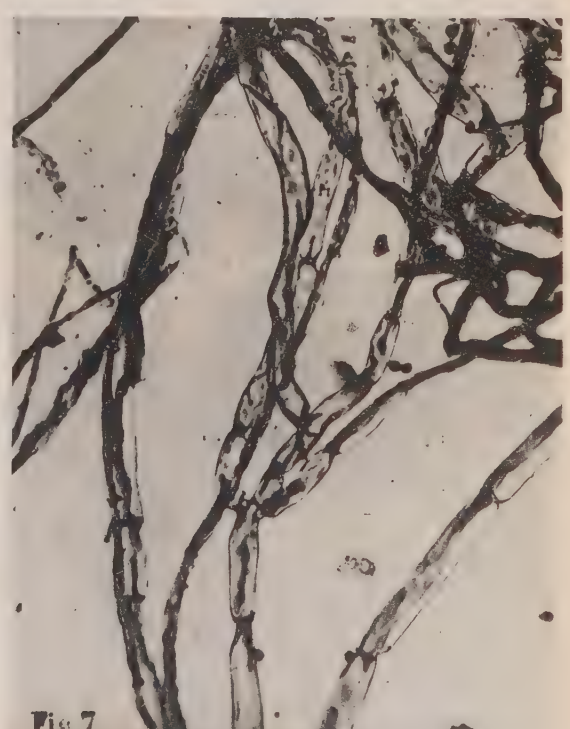

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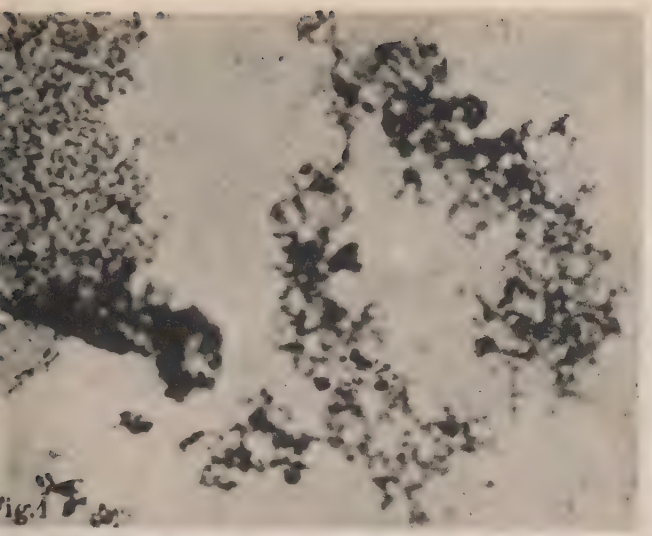
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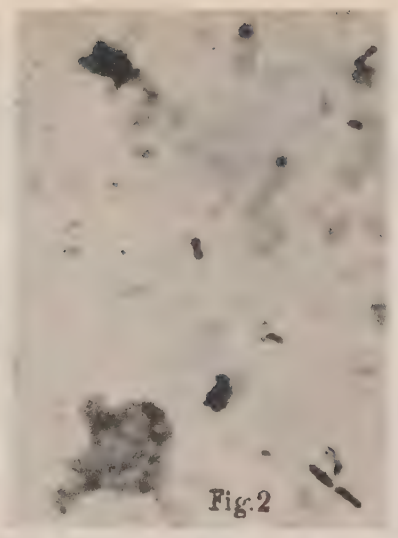
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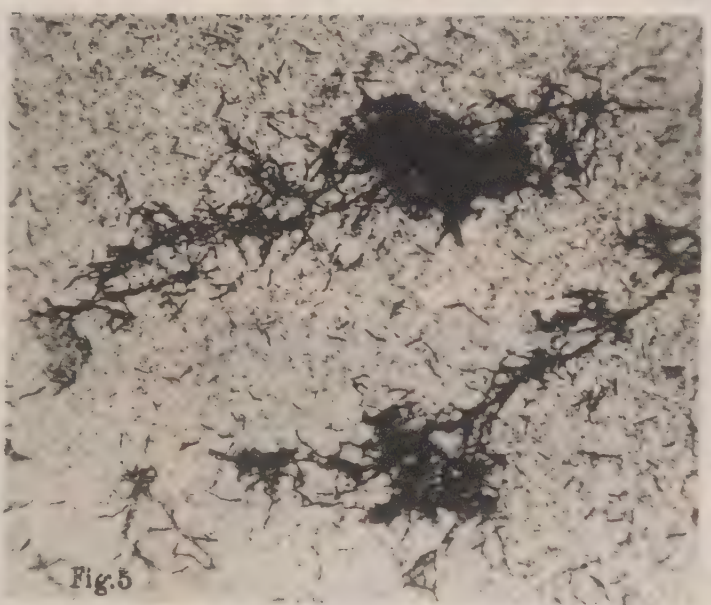
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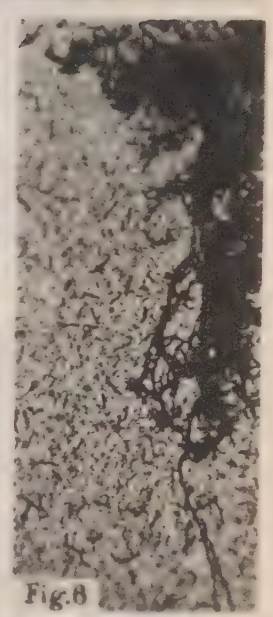
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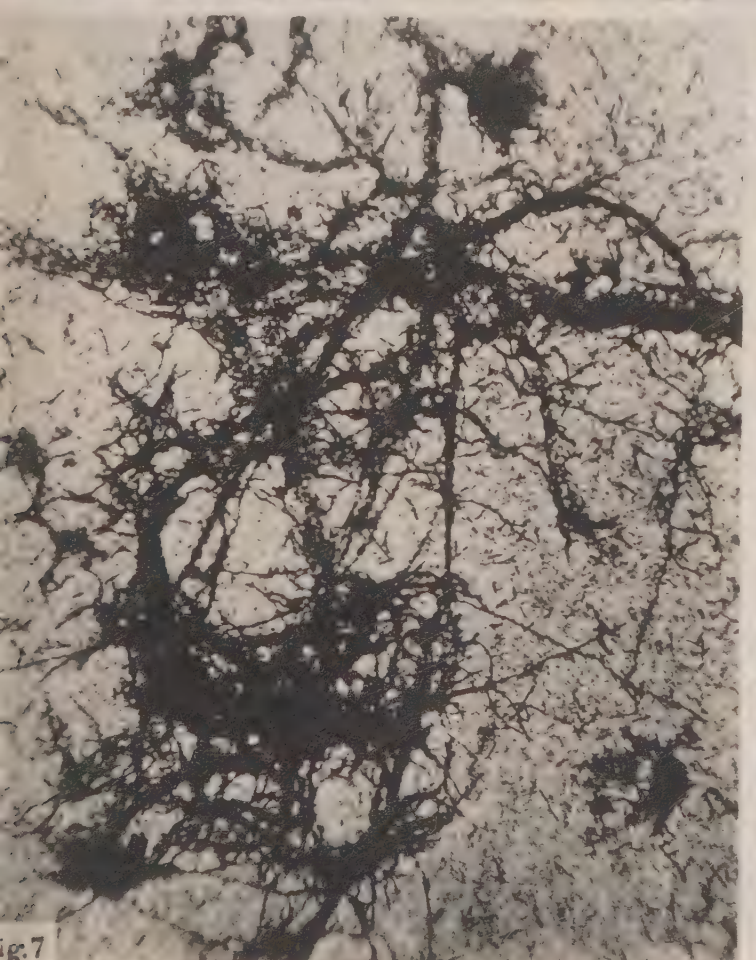
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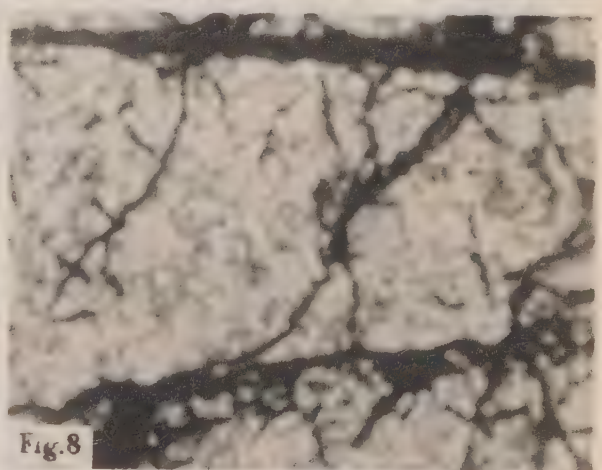
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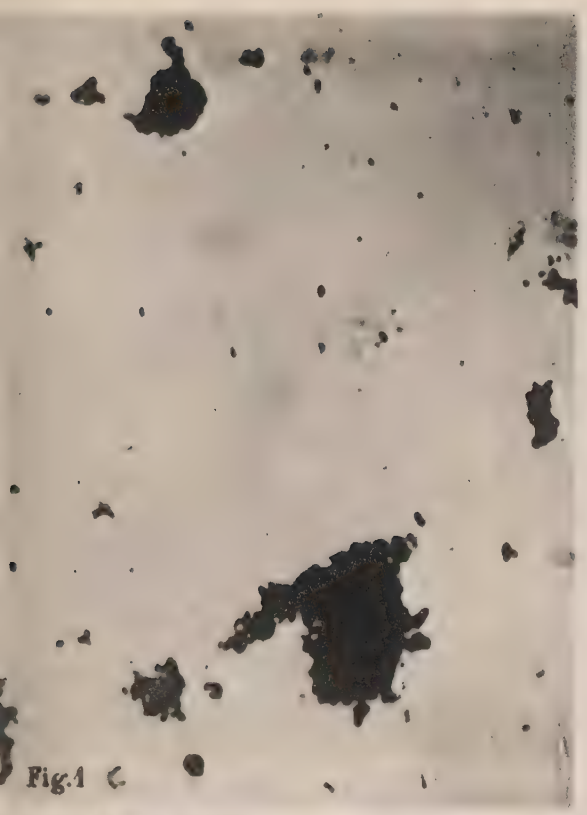

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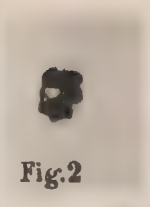

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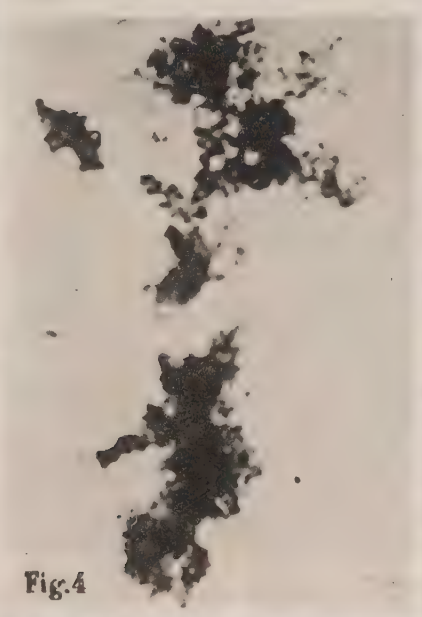

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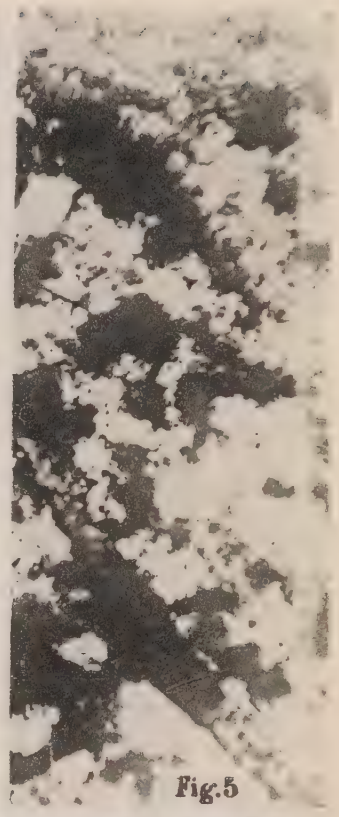

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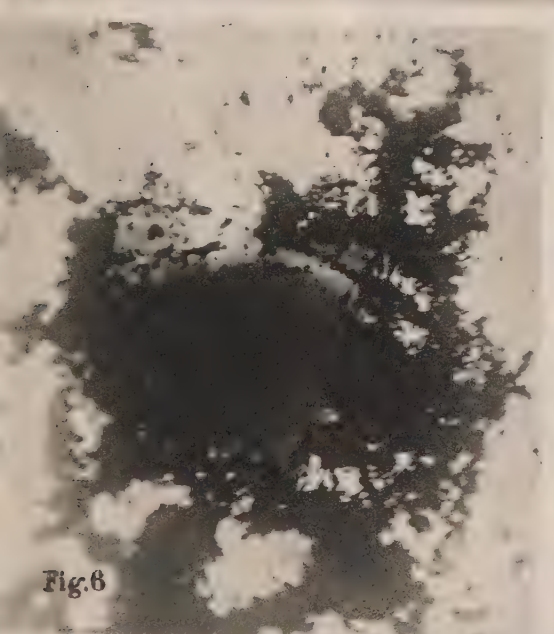

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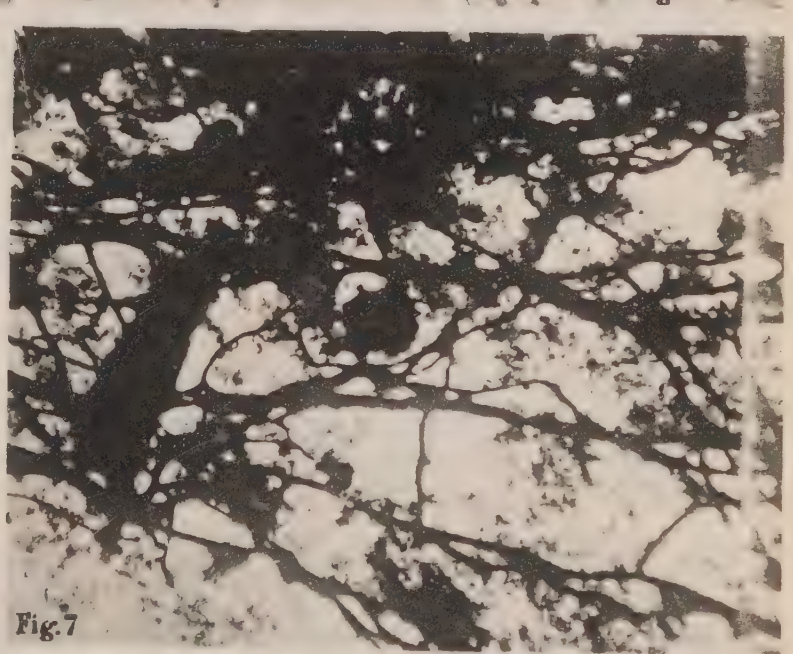

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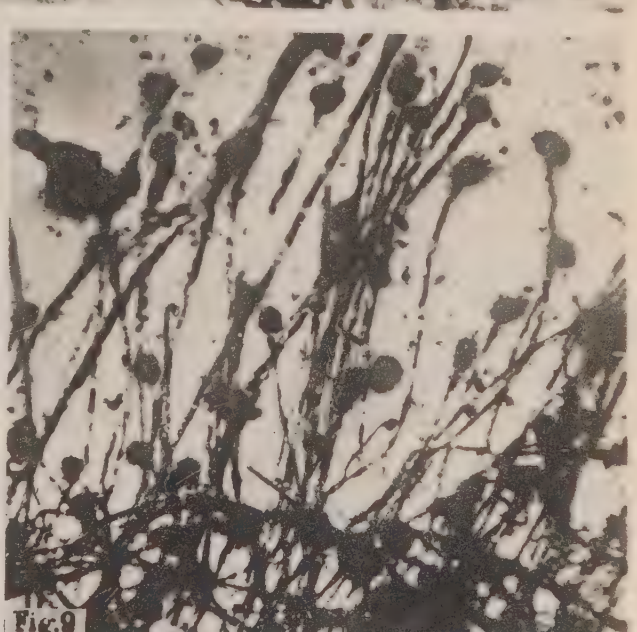

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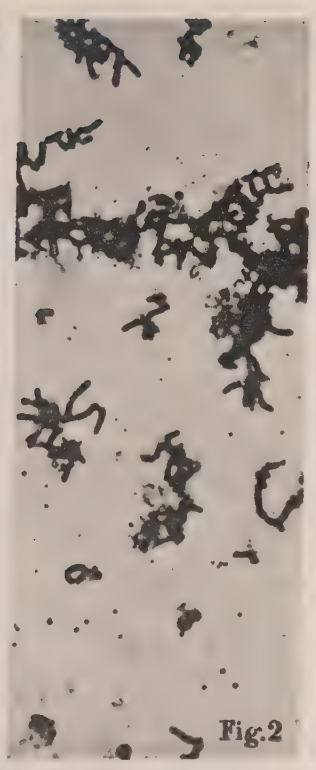
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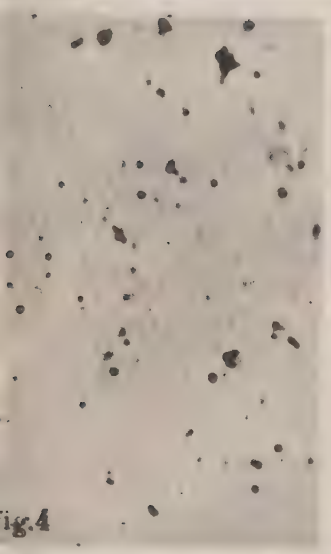
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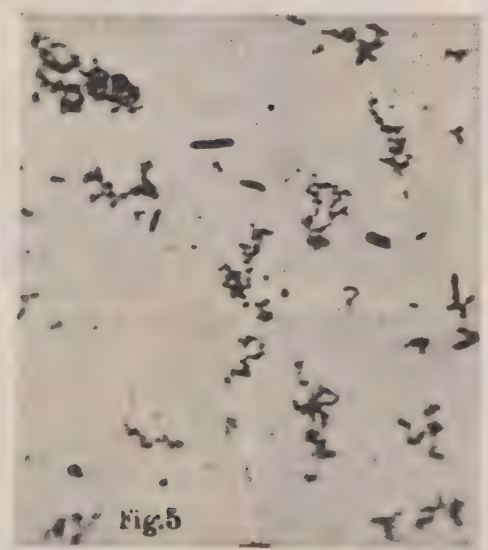
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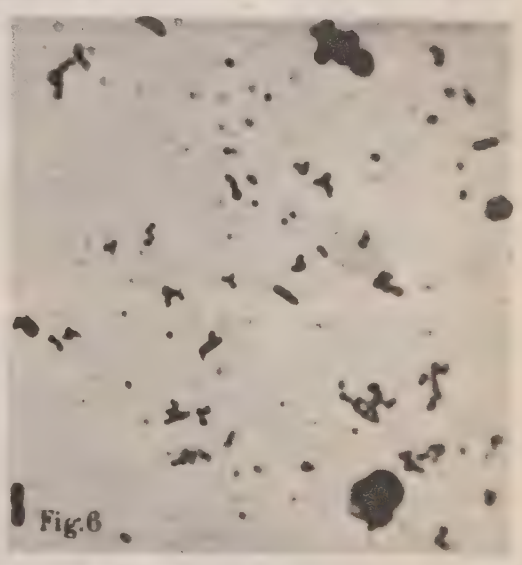
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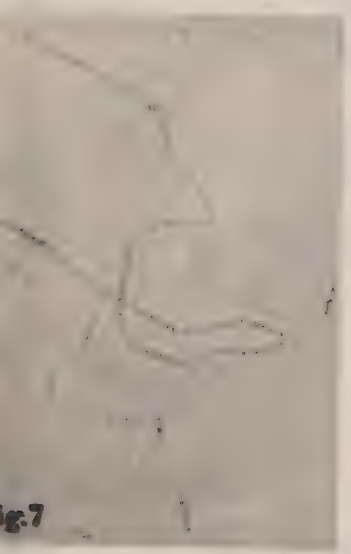
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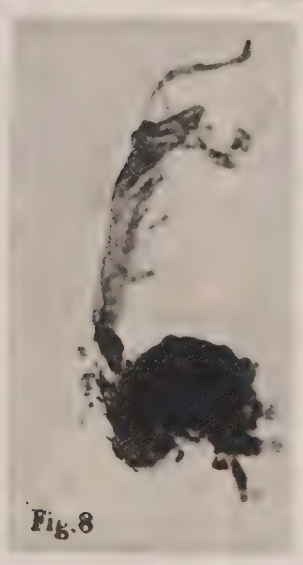
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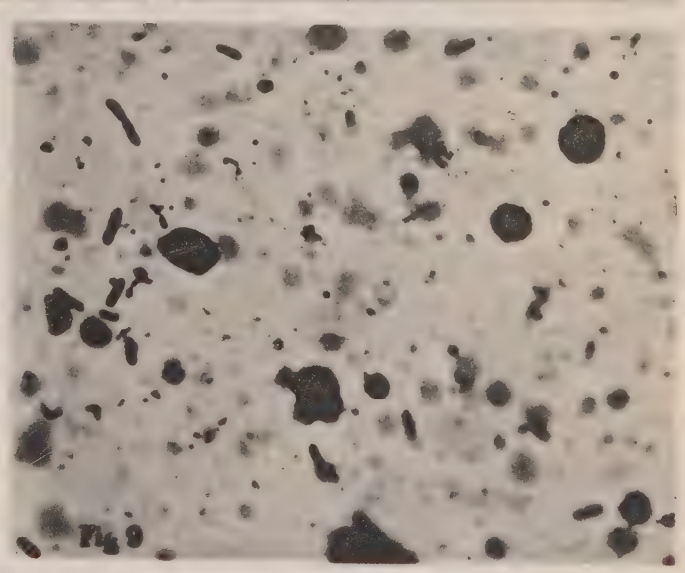
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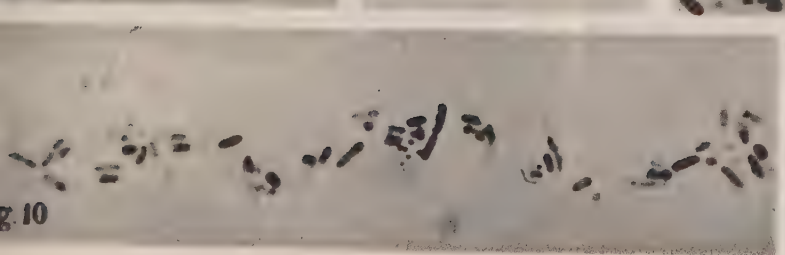
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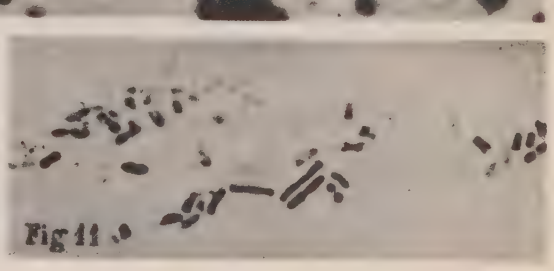
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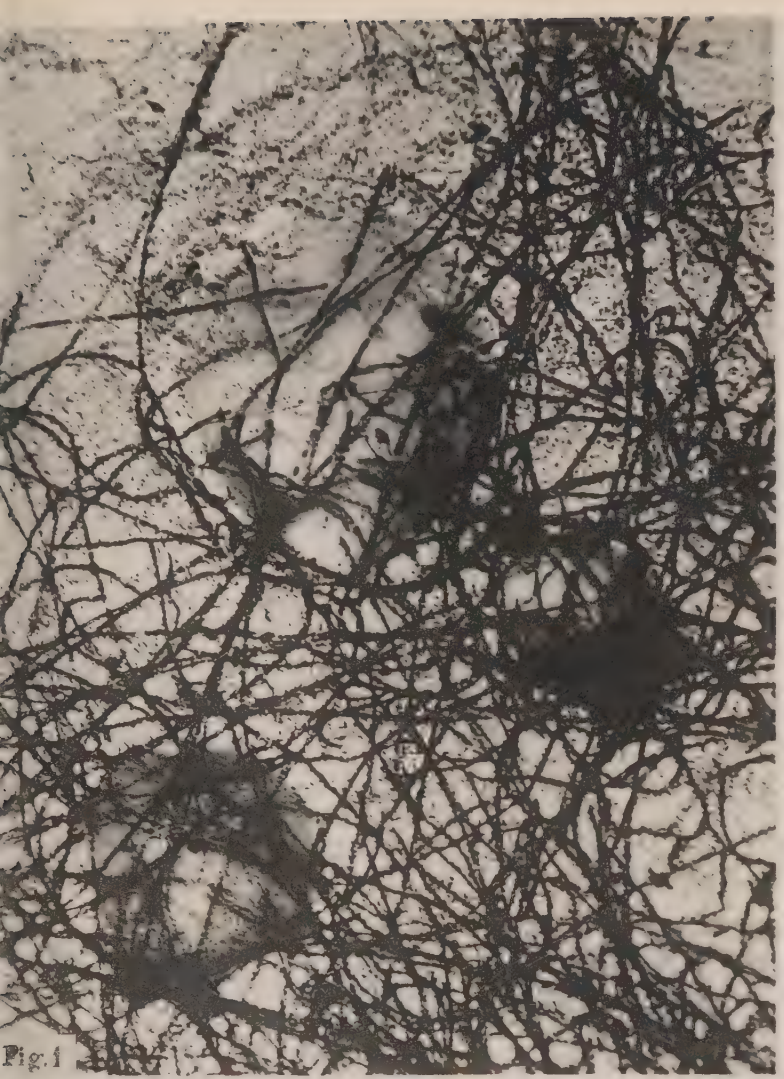

Fig.1

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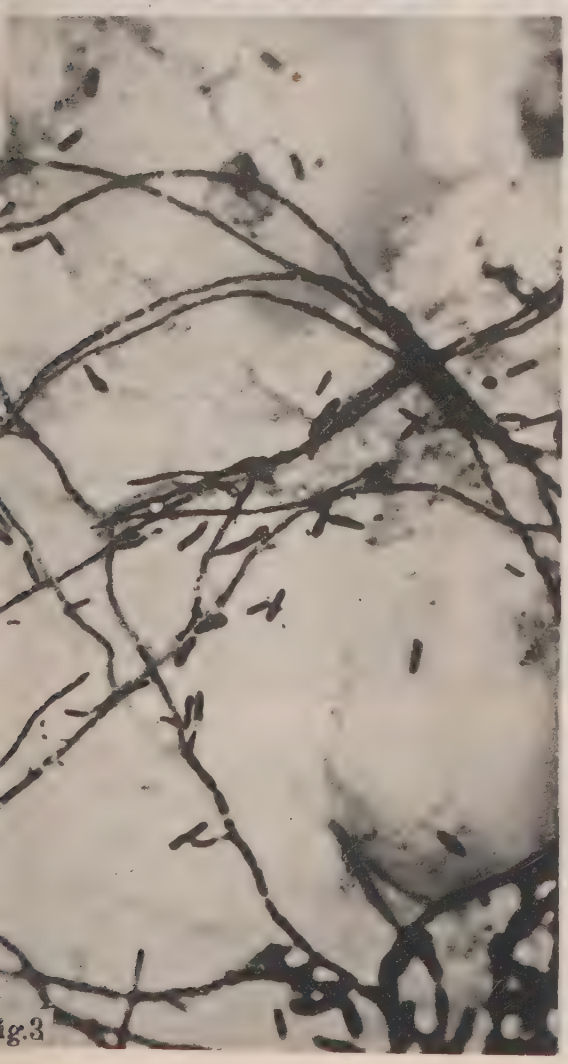

ig.3

Fig.4

Fig.1

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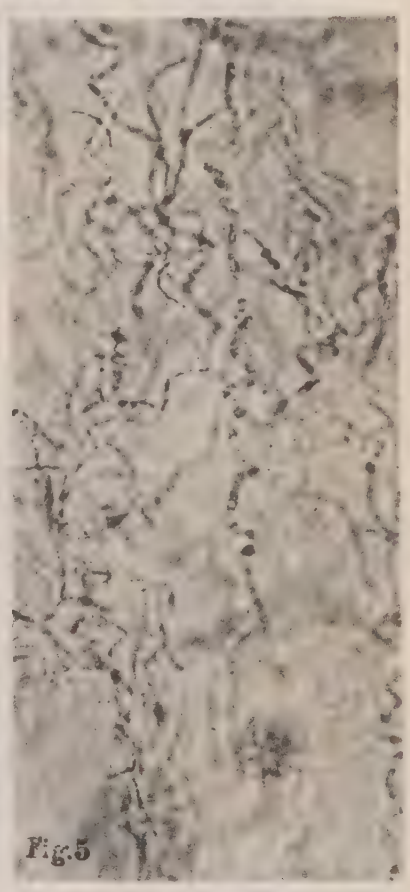
Fig.4



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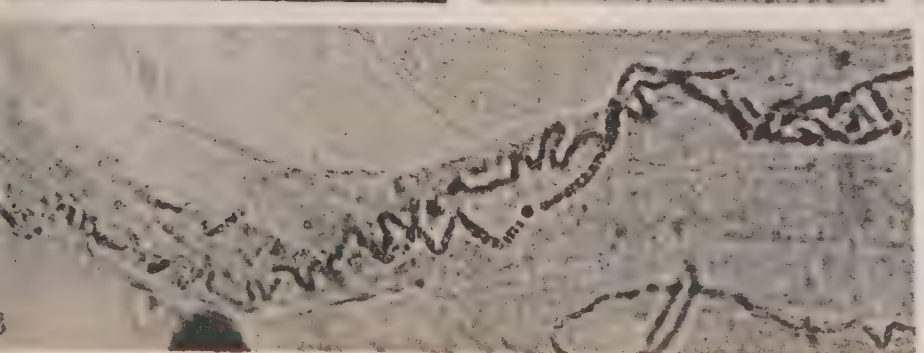

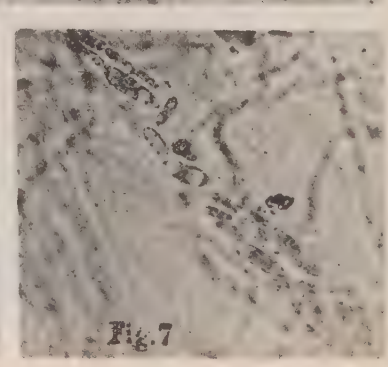

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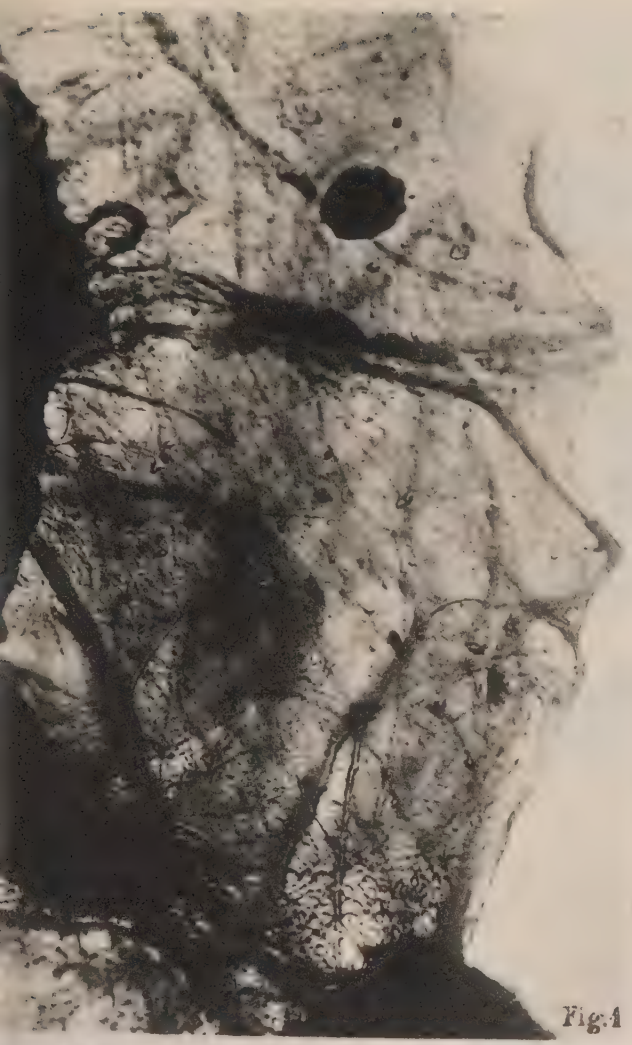


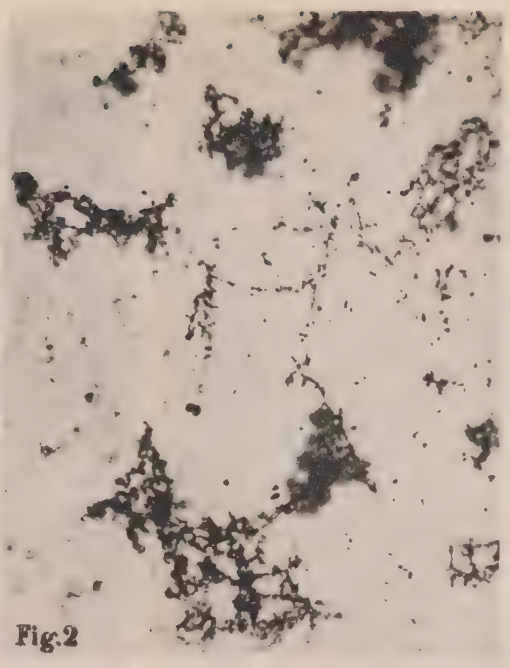
Fig.1

Fig.2

Fig.3

Fig.4

Fig.1



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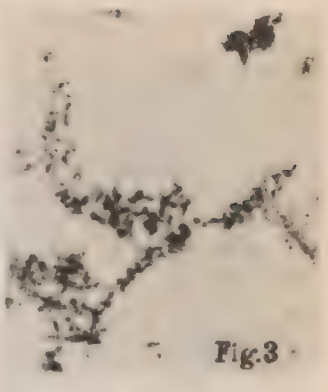

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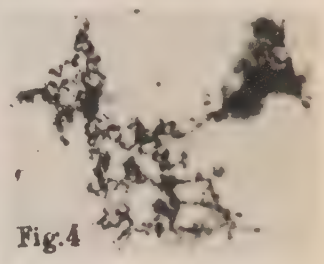

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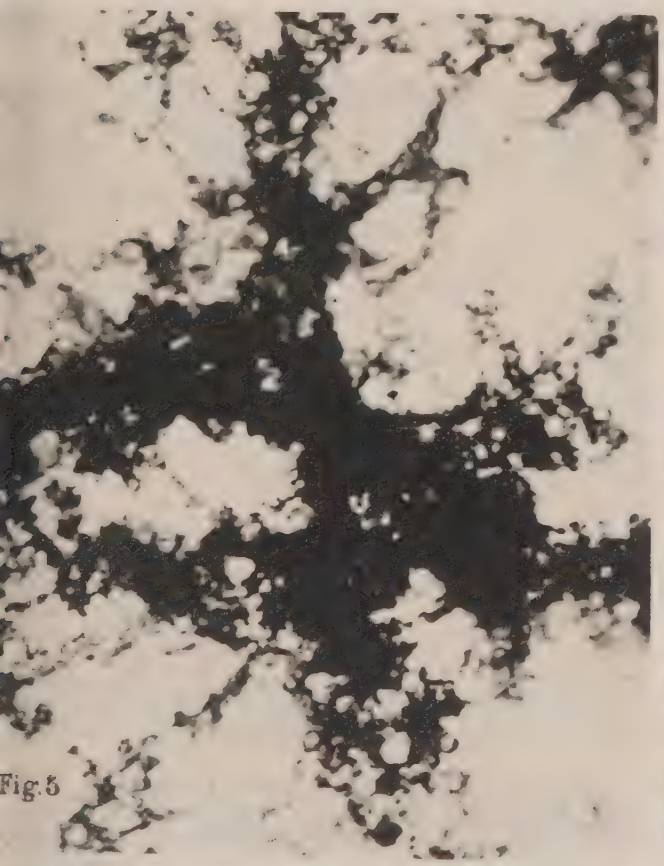

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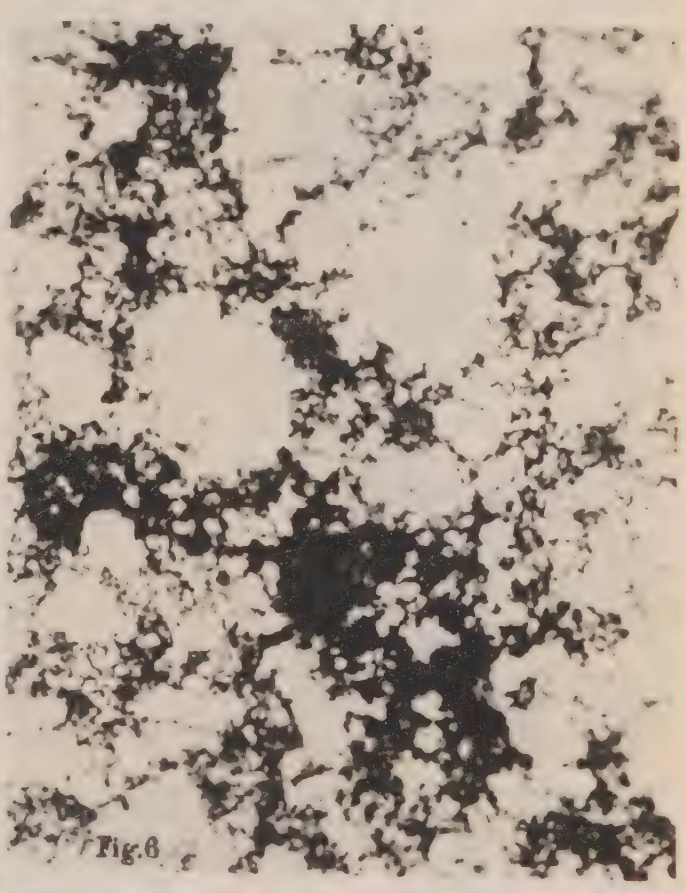

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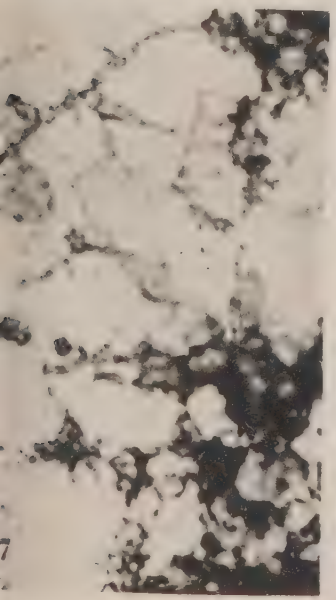

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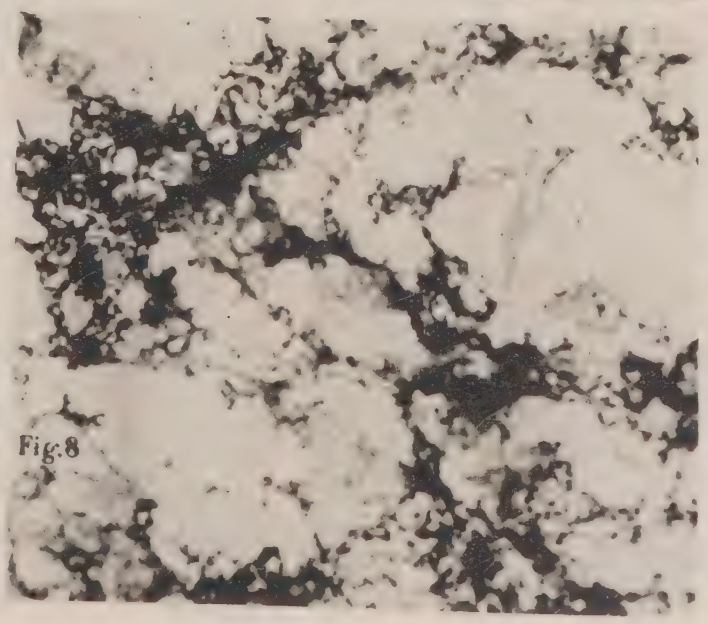

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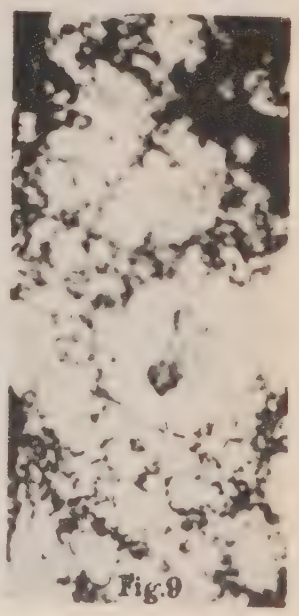

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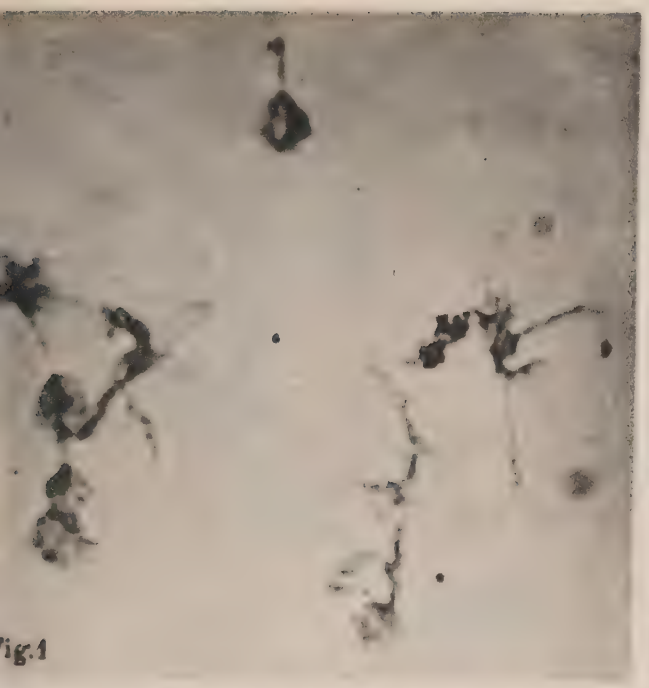
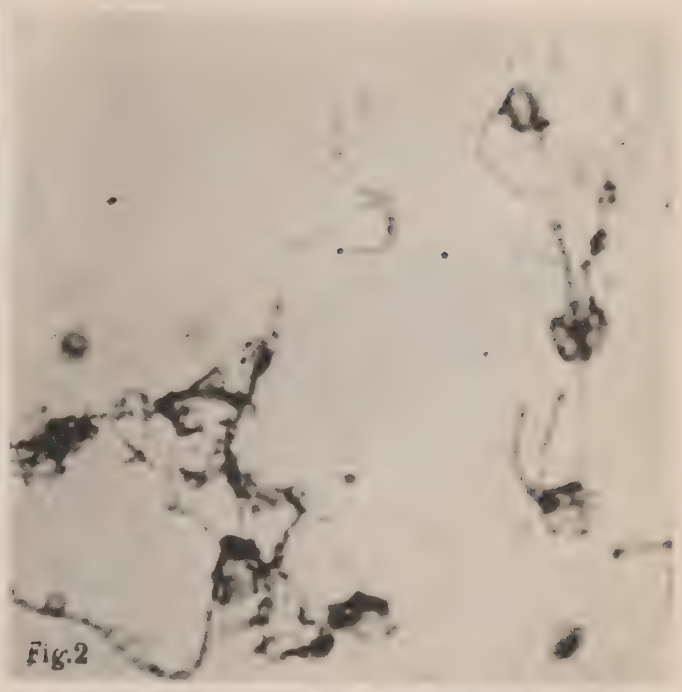


Fig.1



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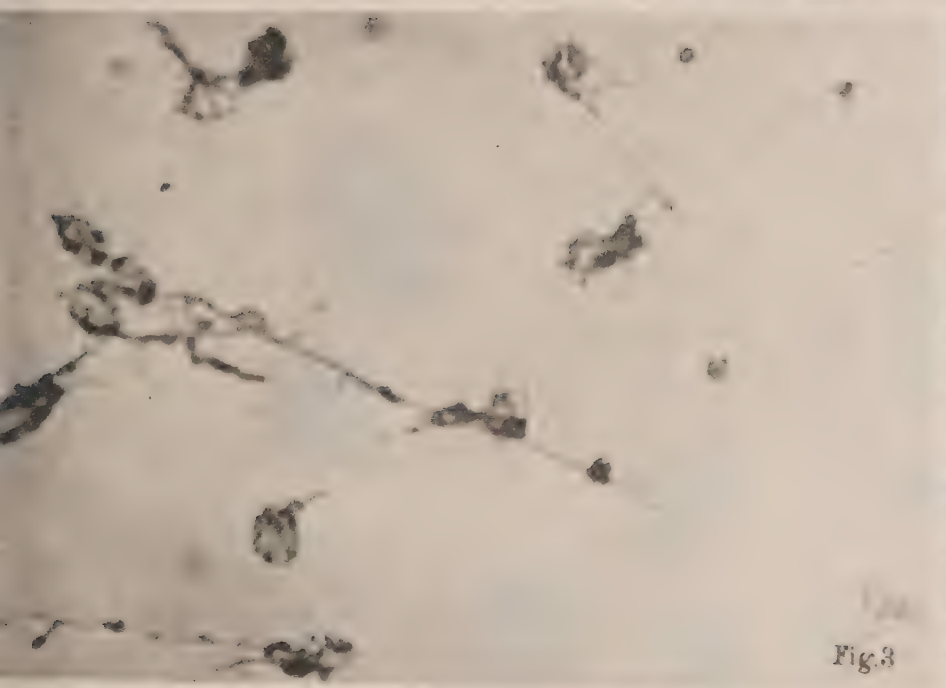

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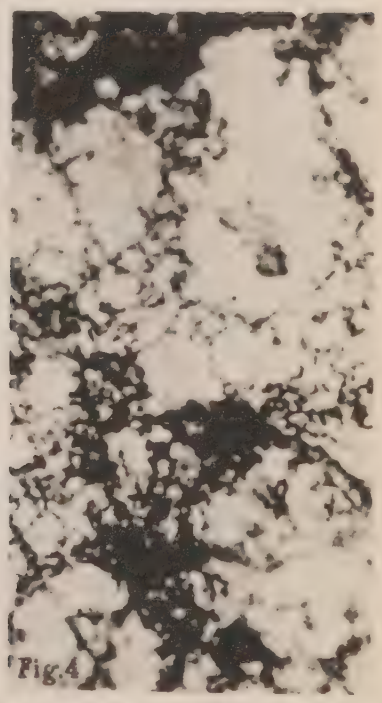

Fig.4

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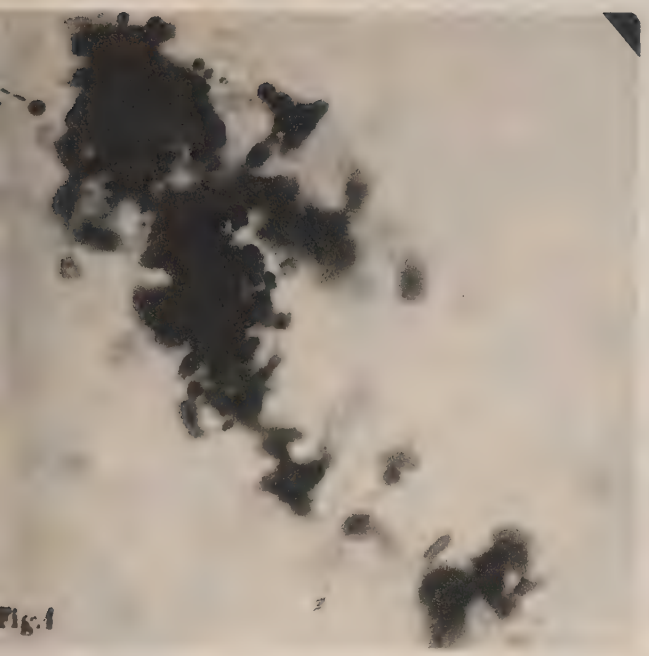

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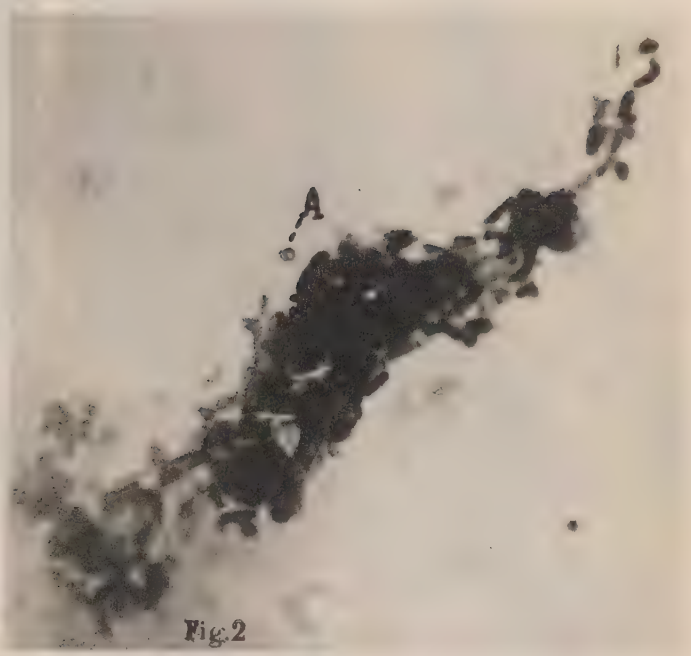

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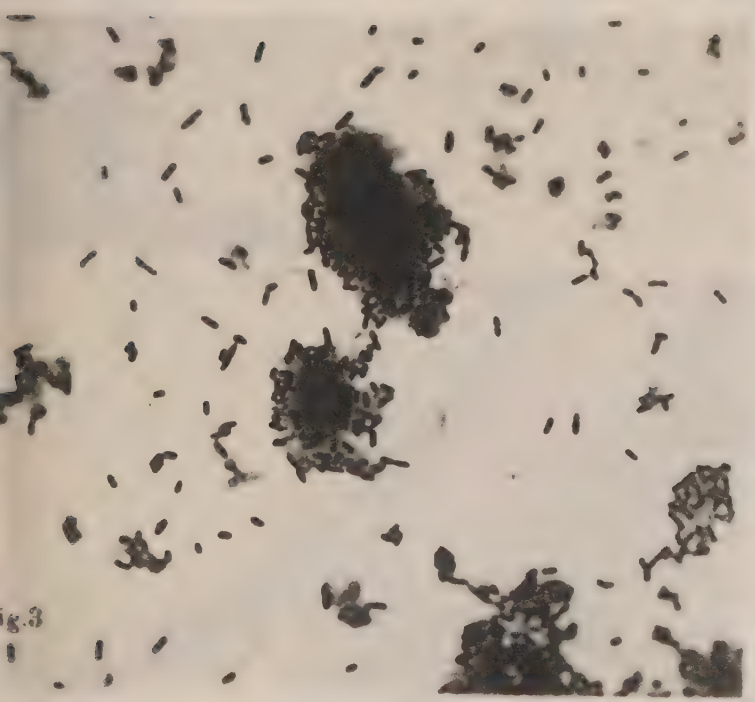

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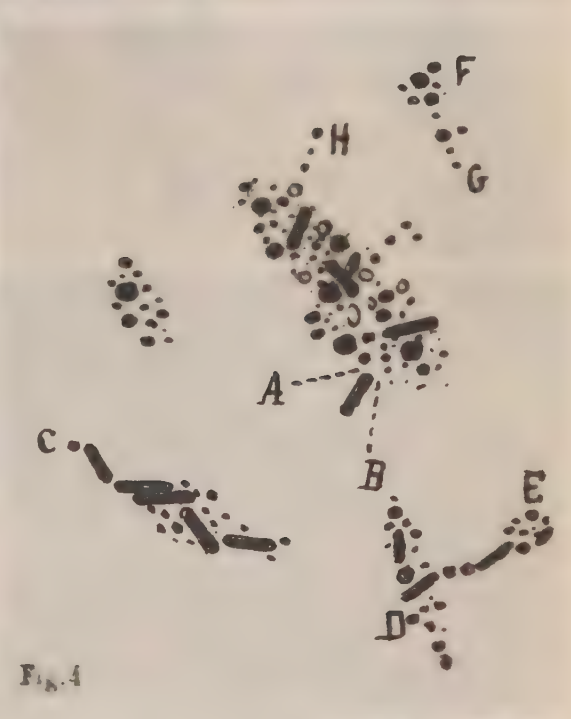

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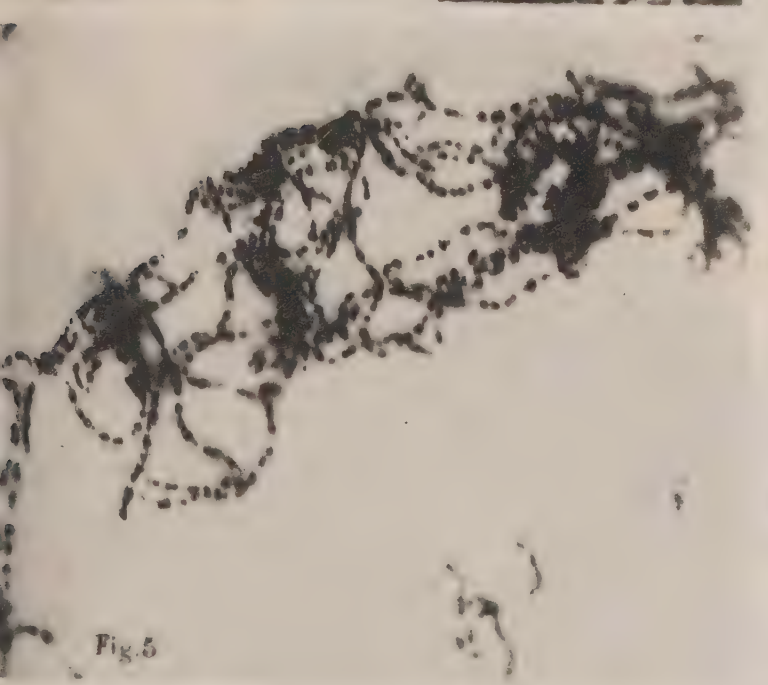
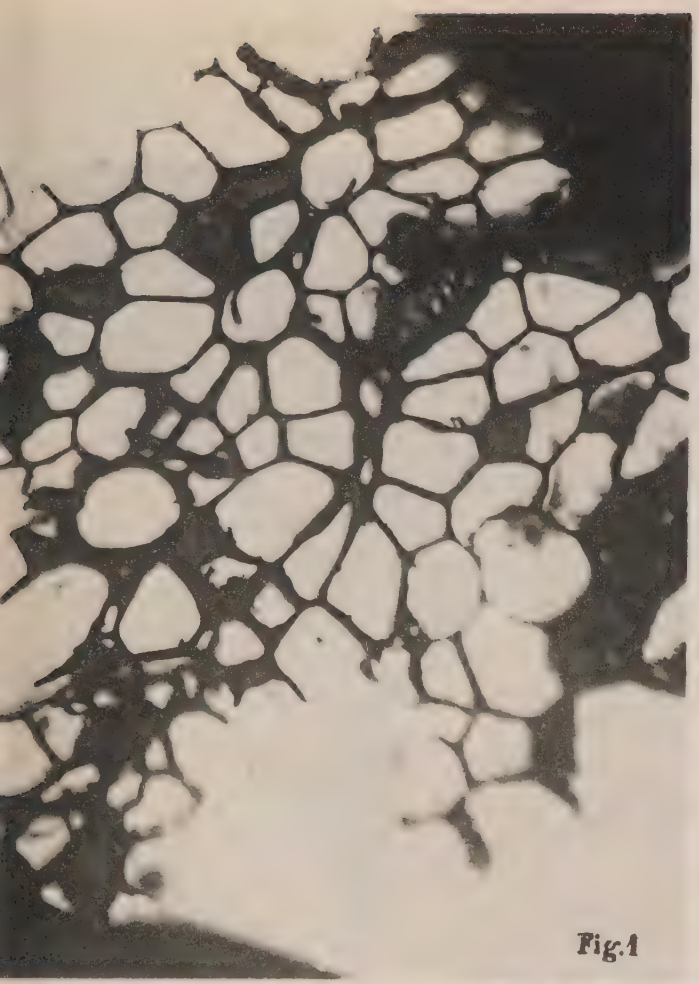


Fig.5

Fig.6



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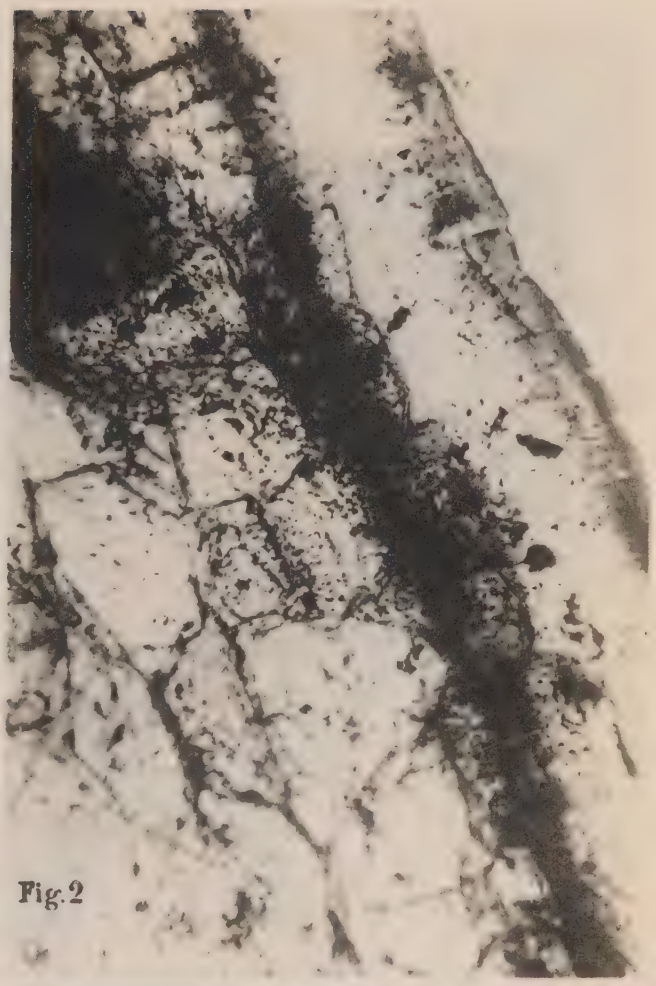

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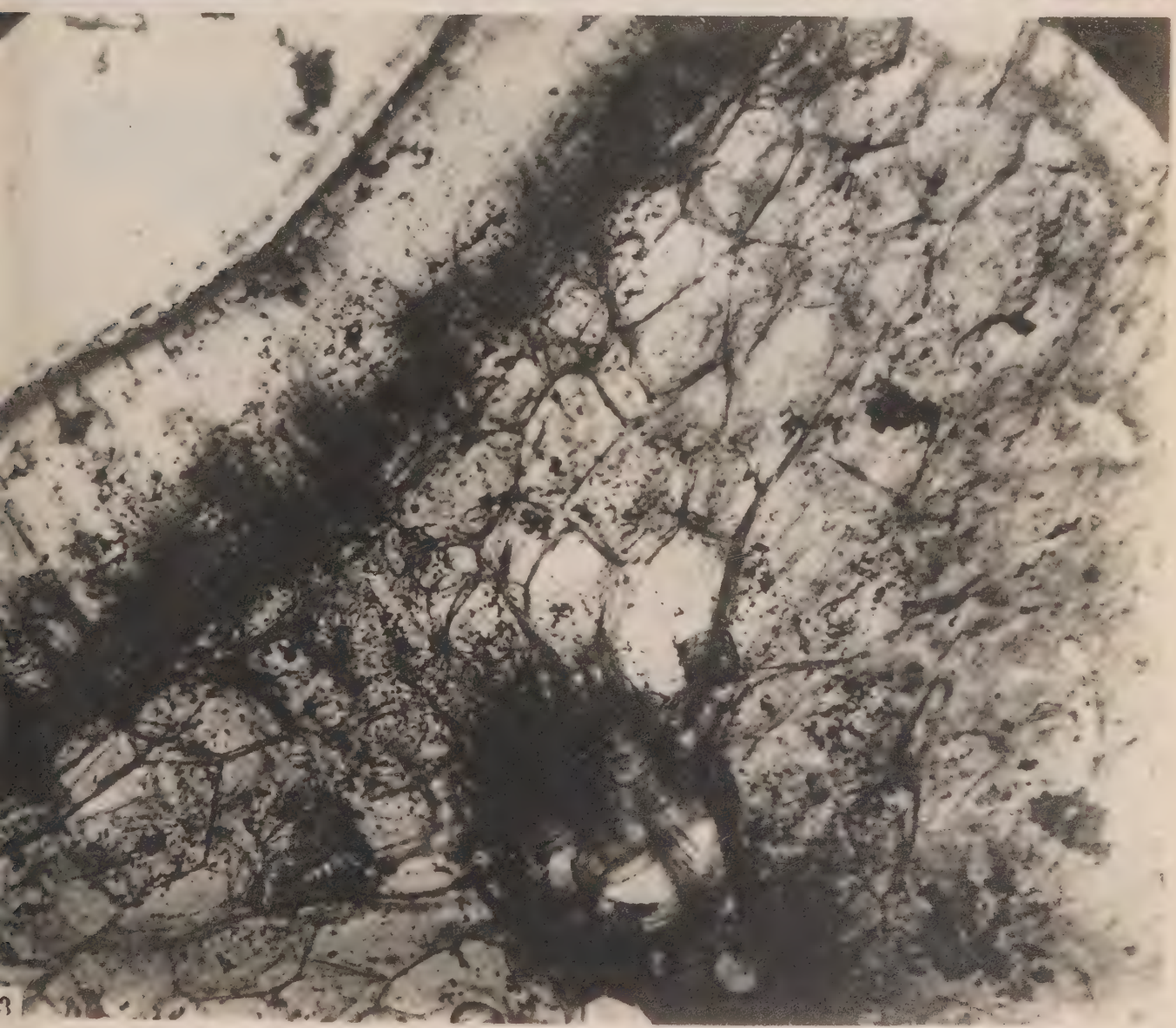


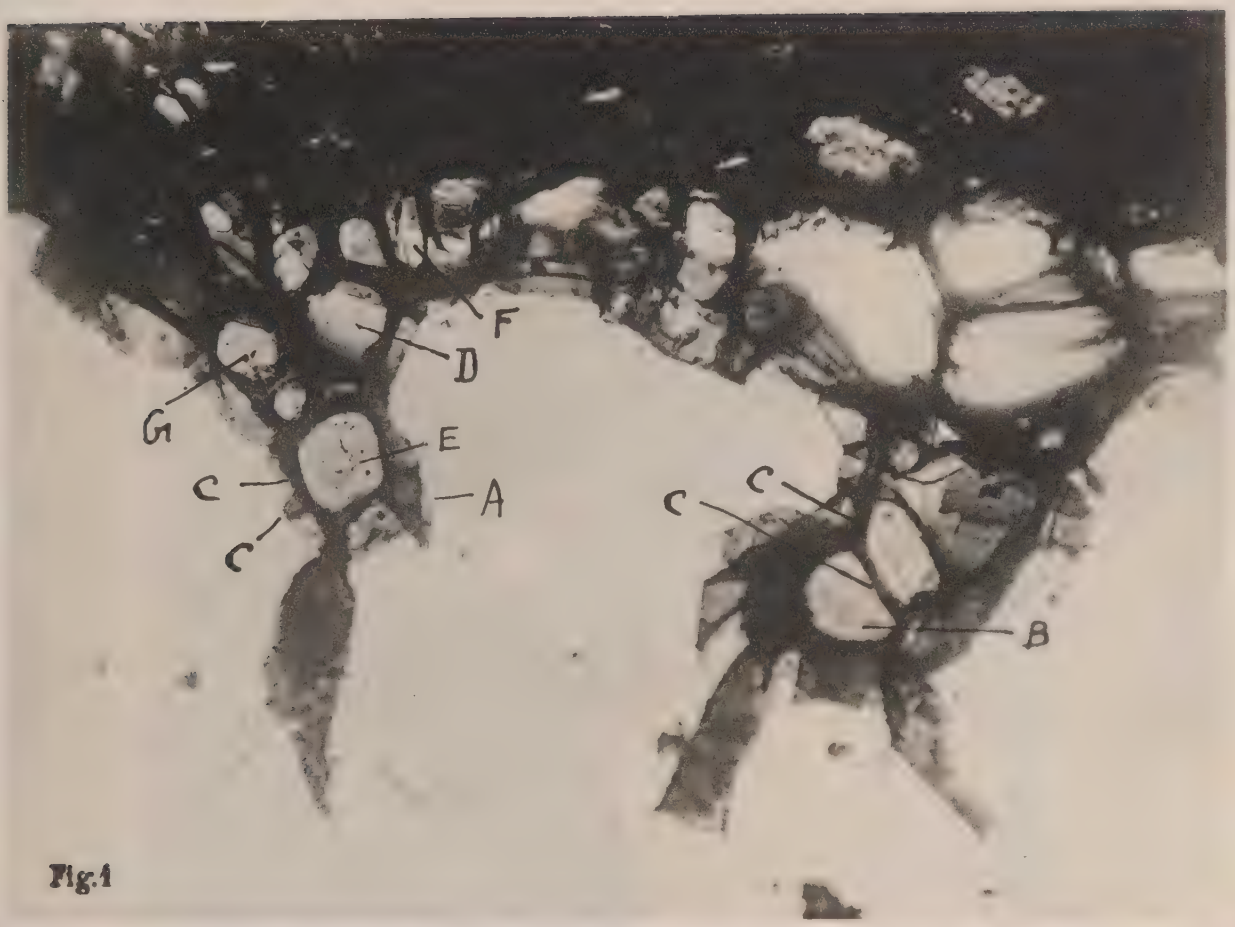
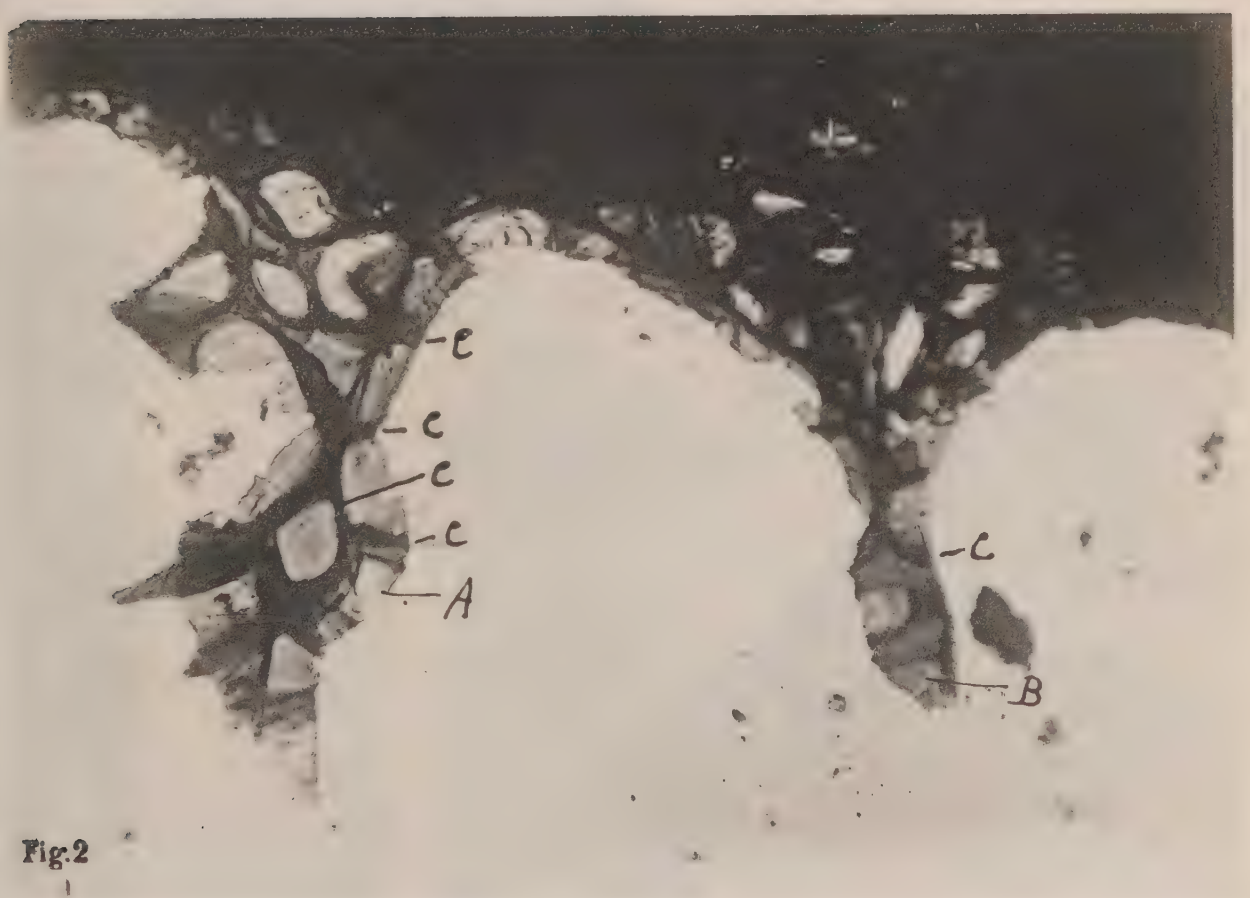


Fig.1



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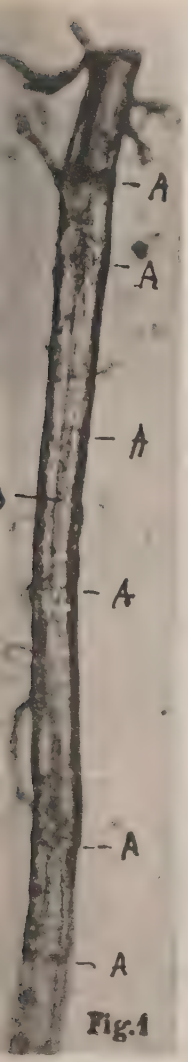

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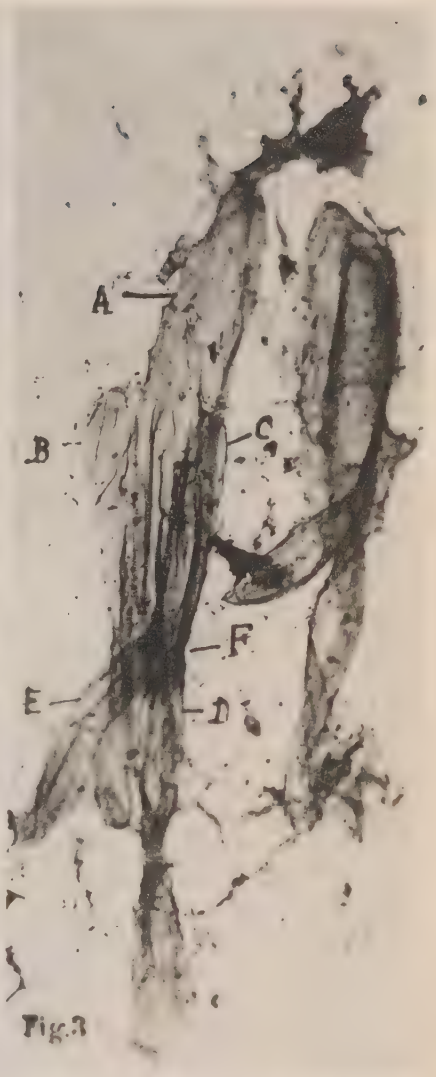

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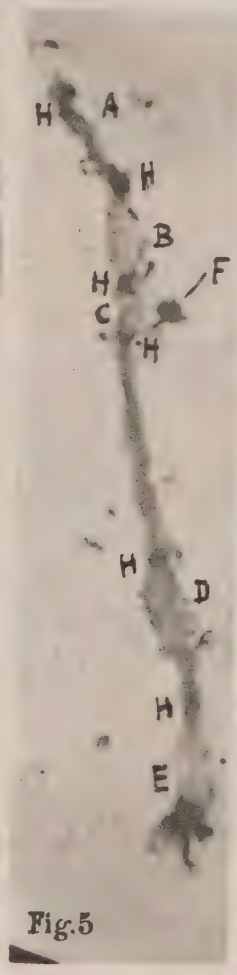

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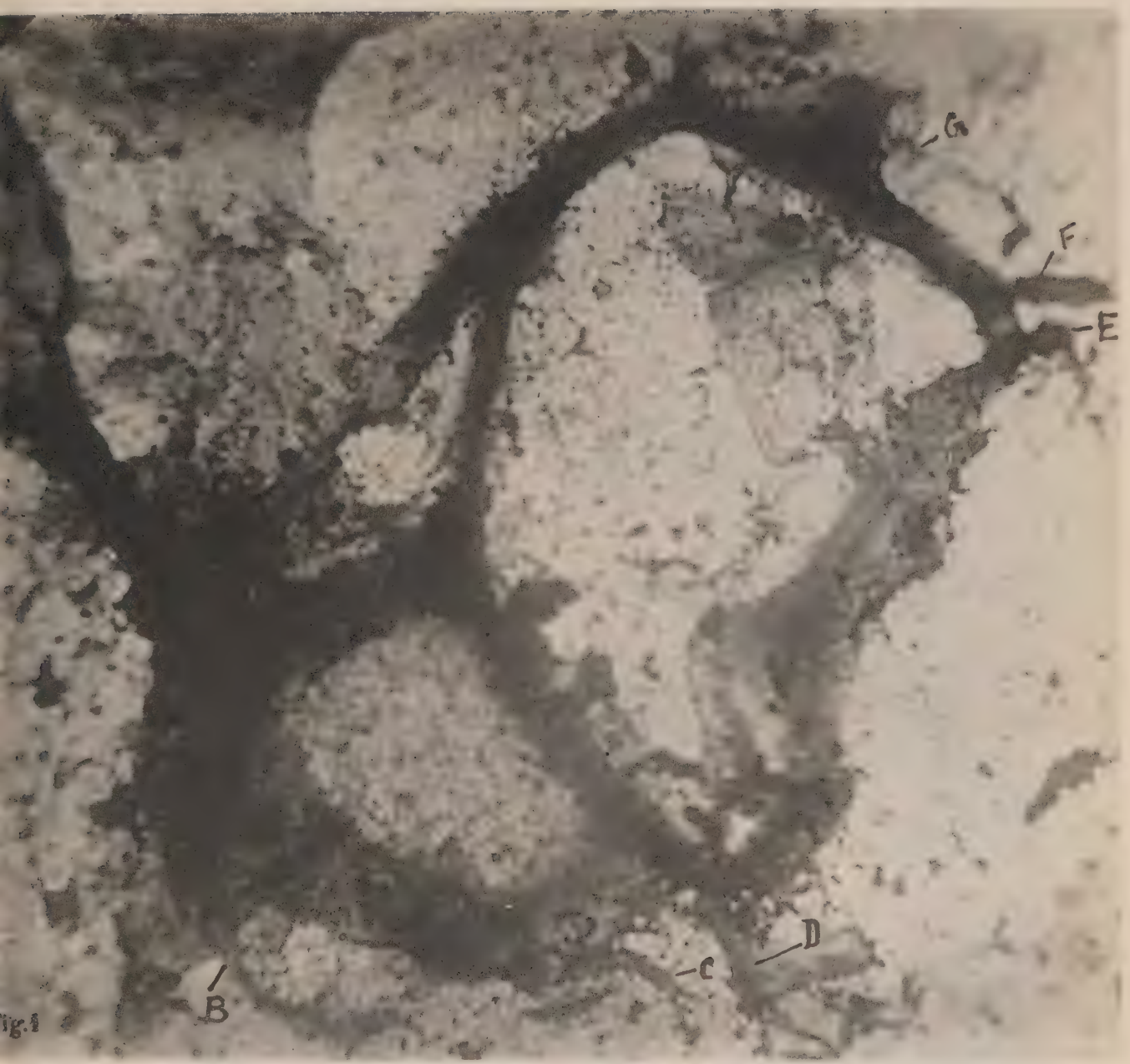

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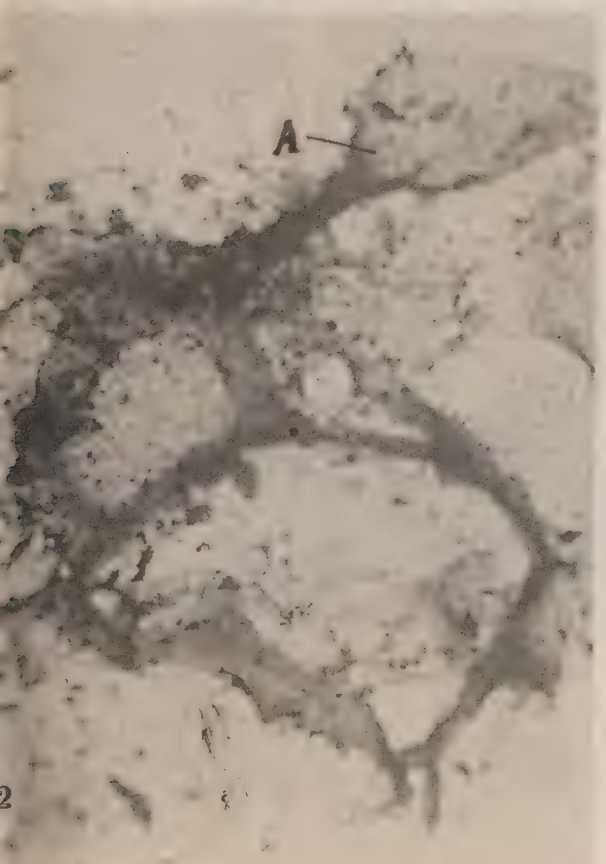

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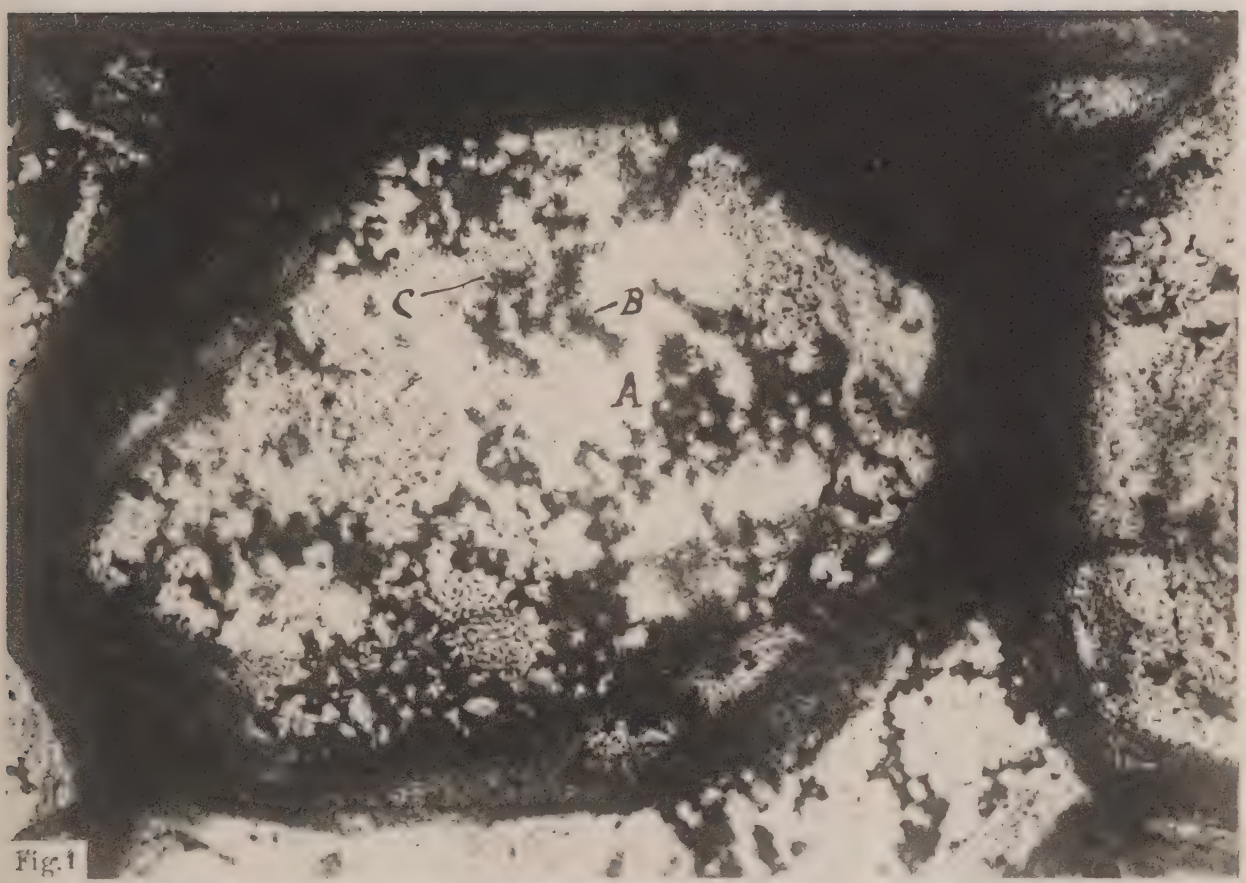

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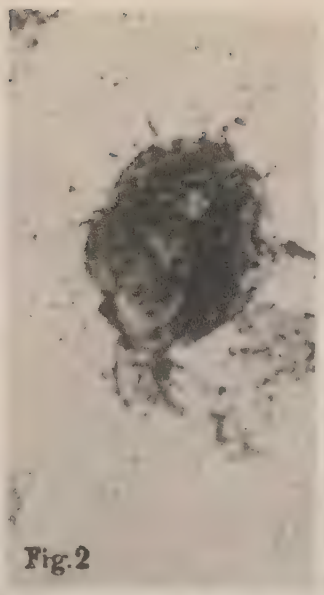
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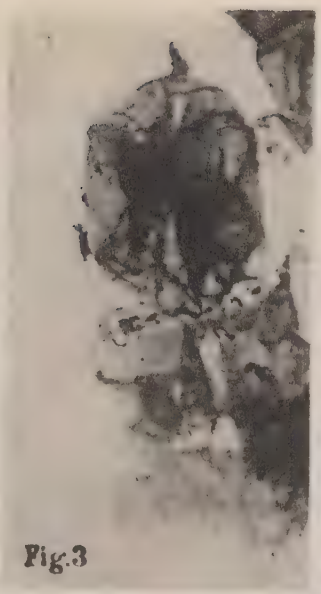
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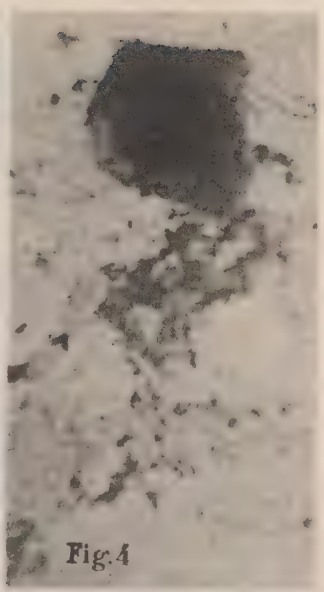
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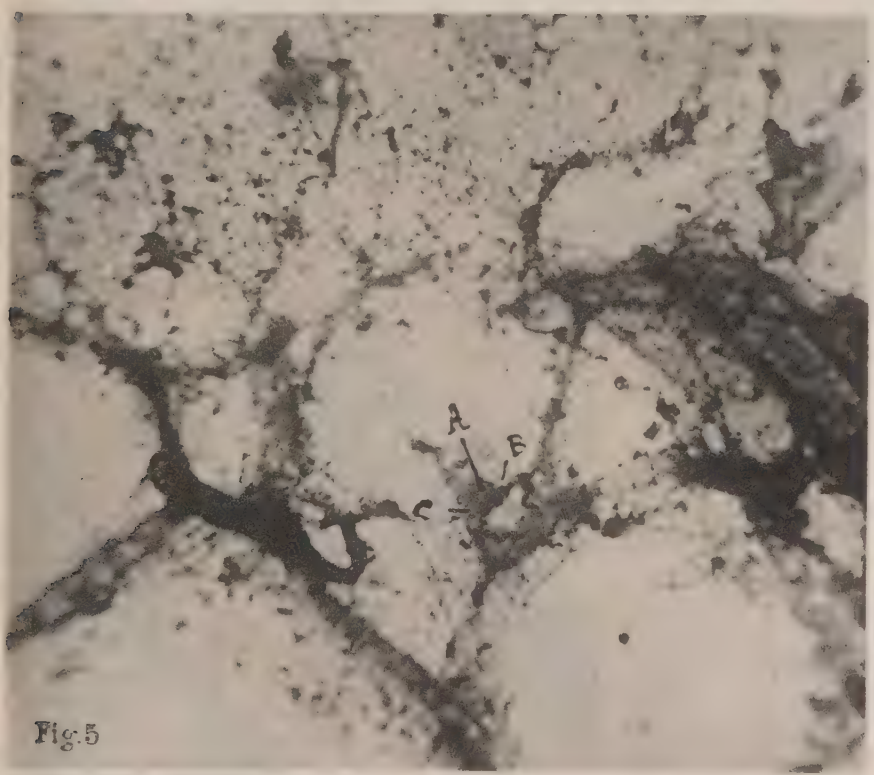

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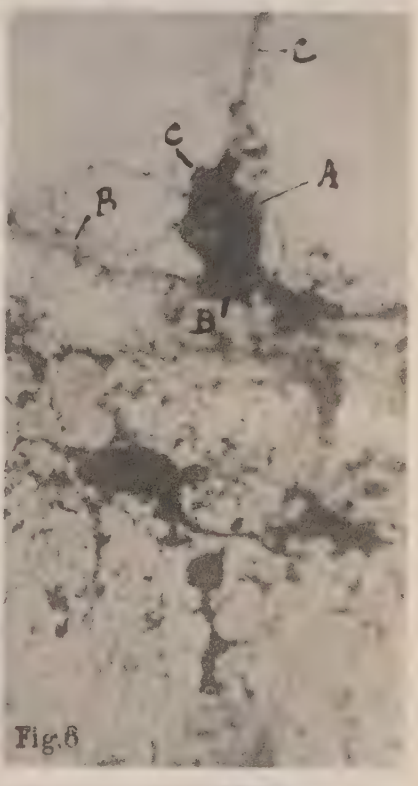

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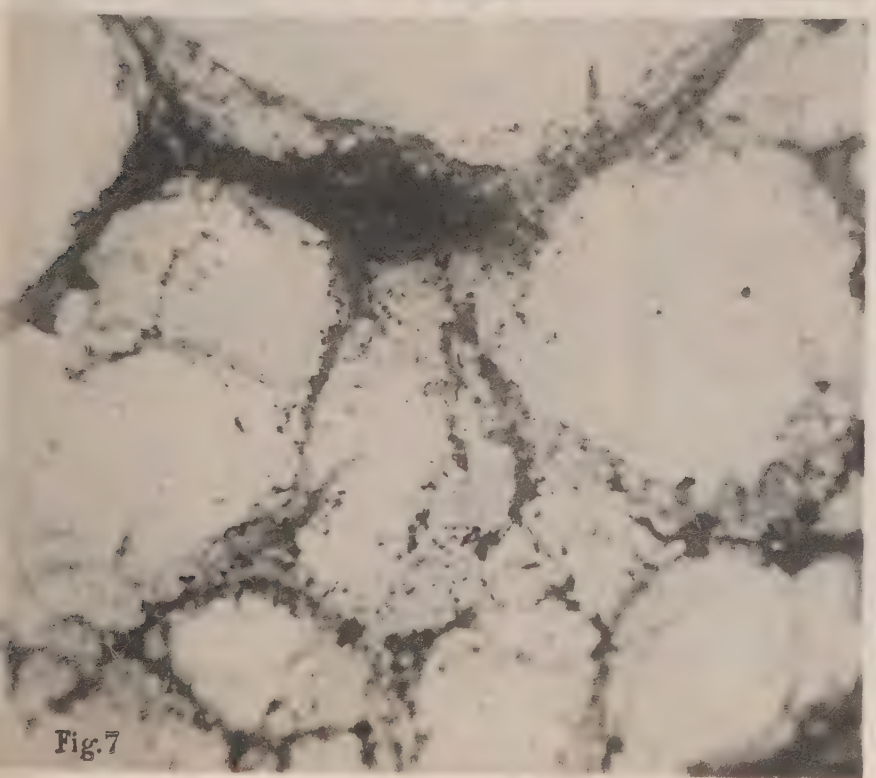
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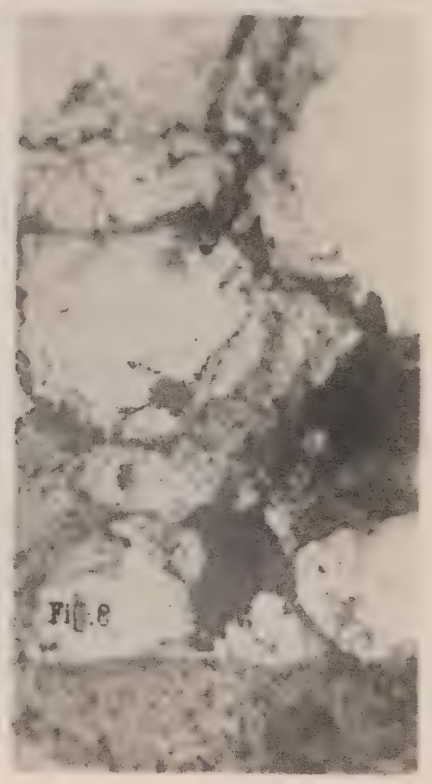
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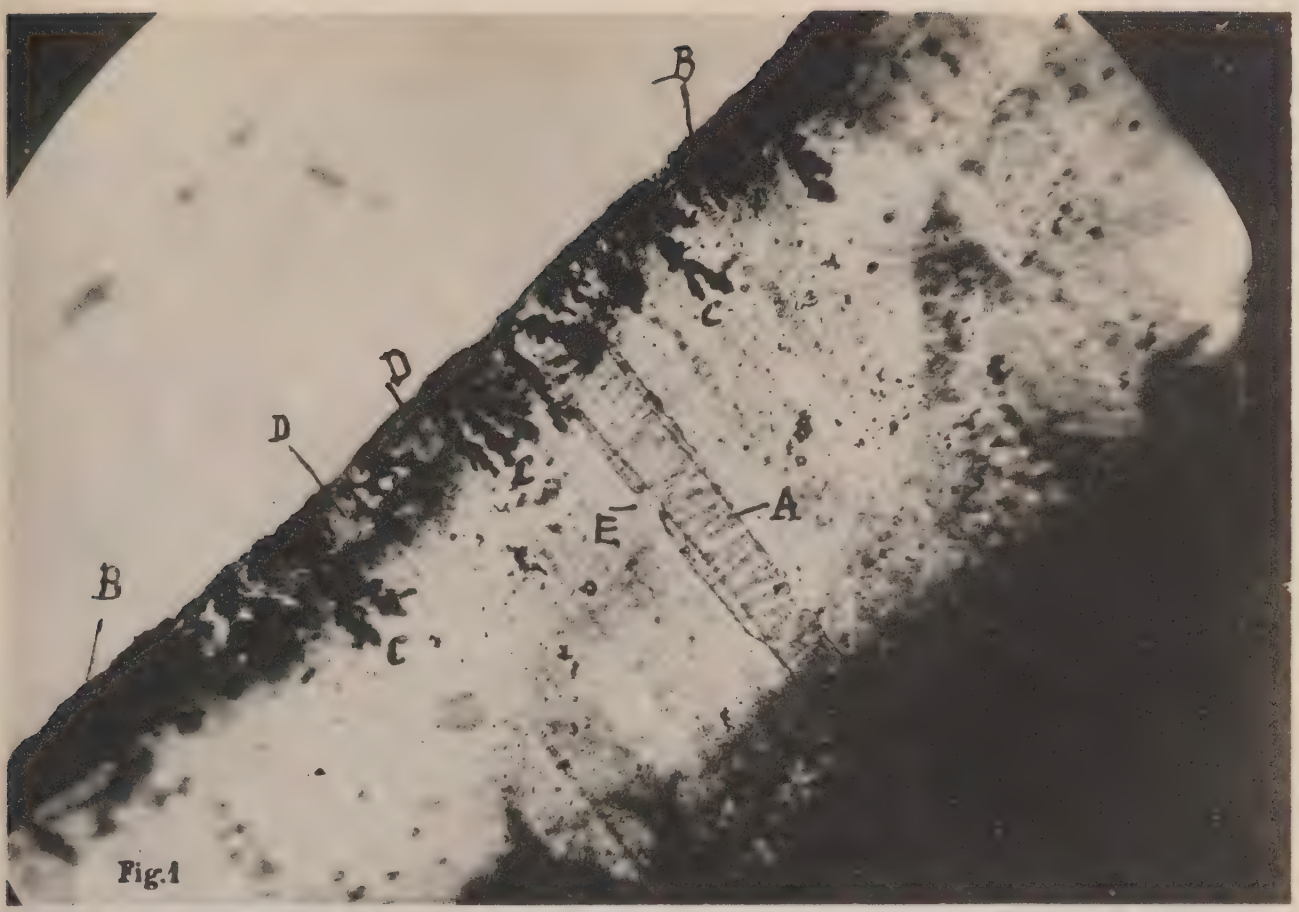

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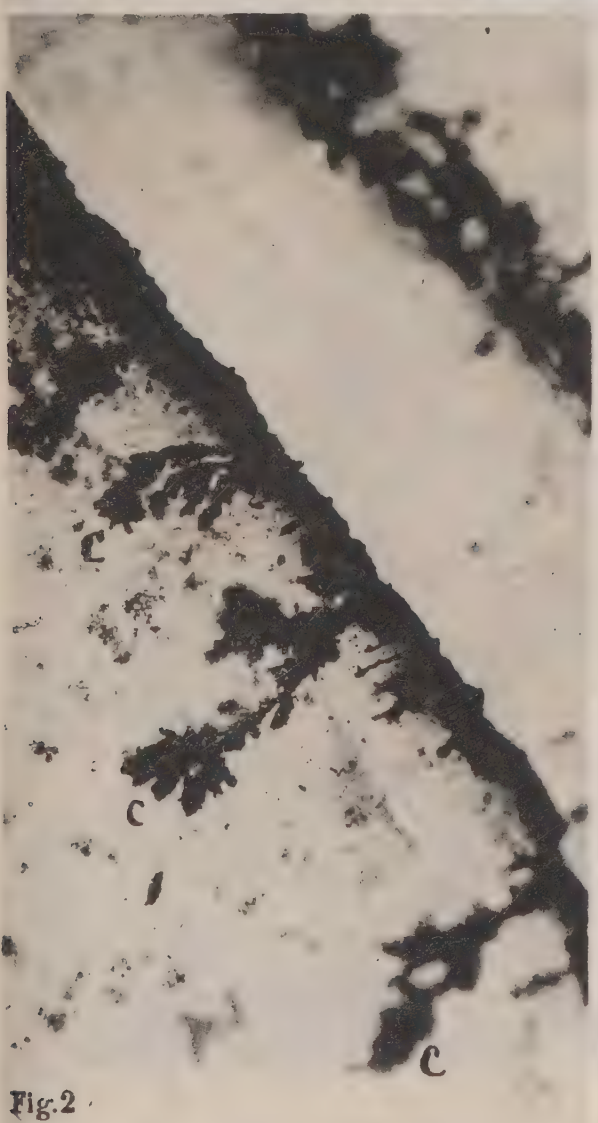

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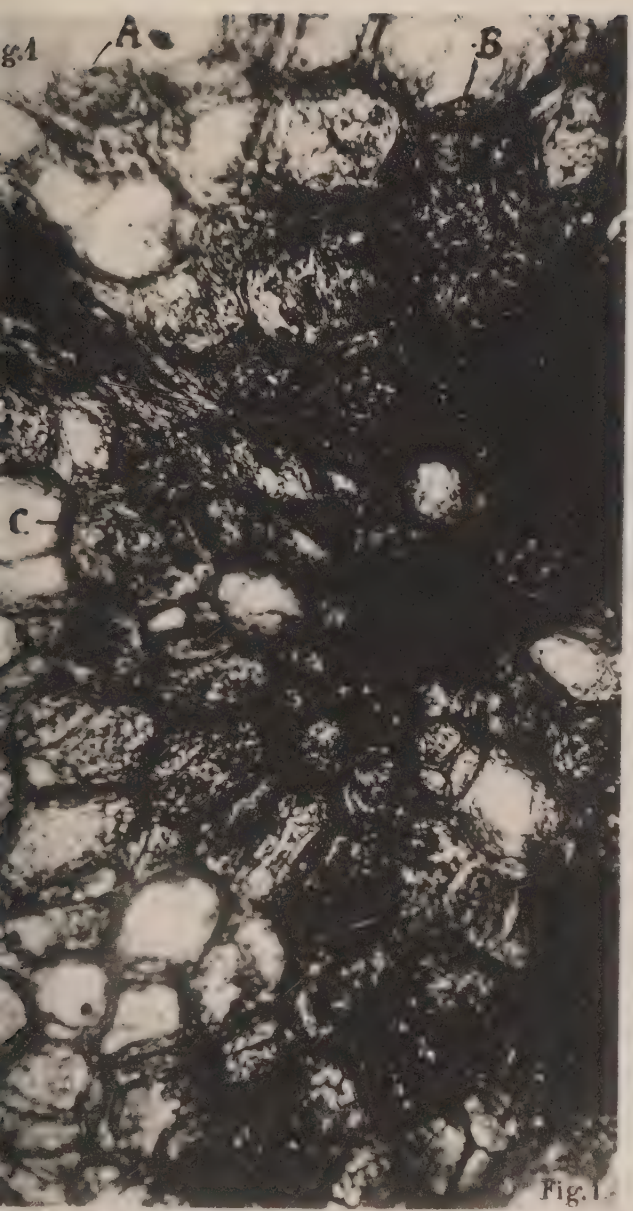

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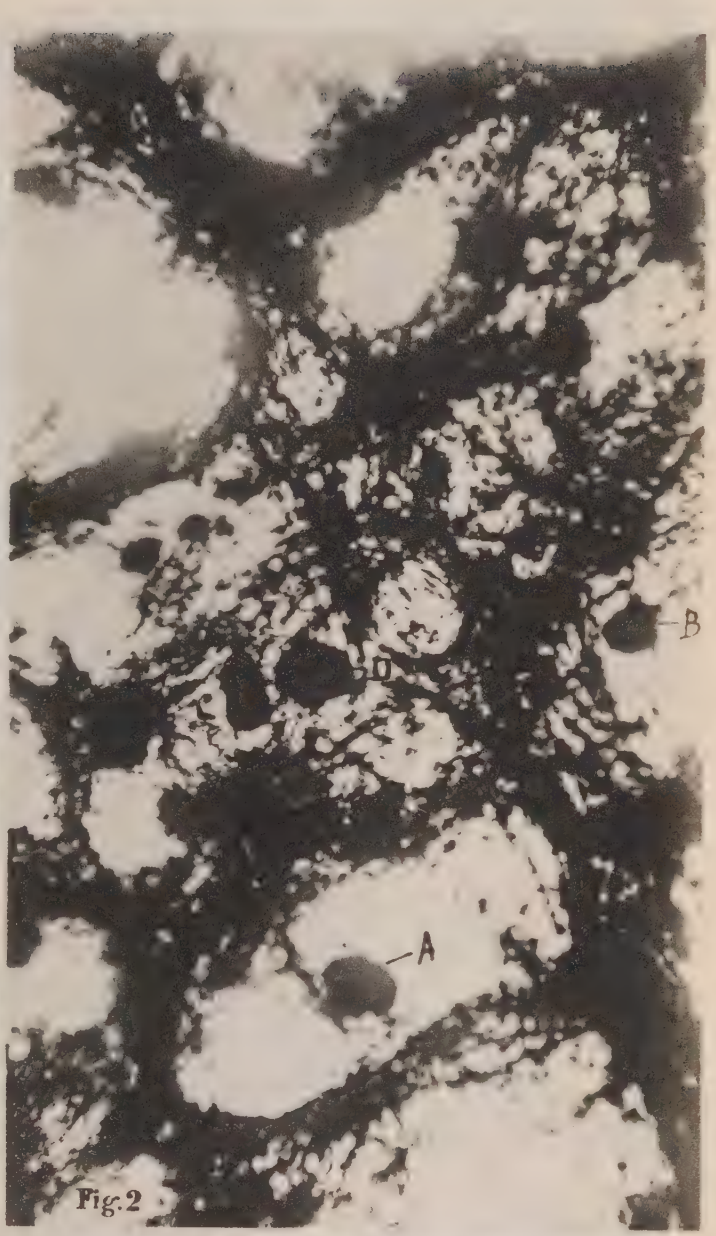

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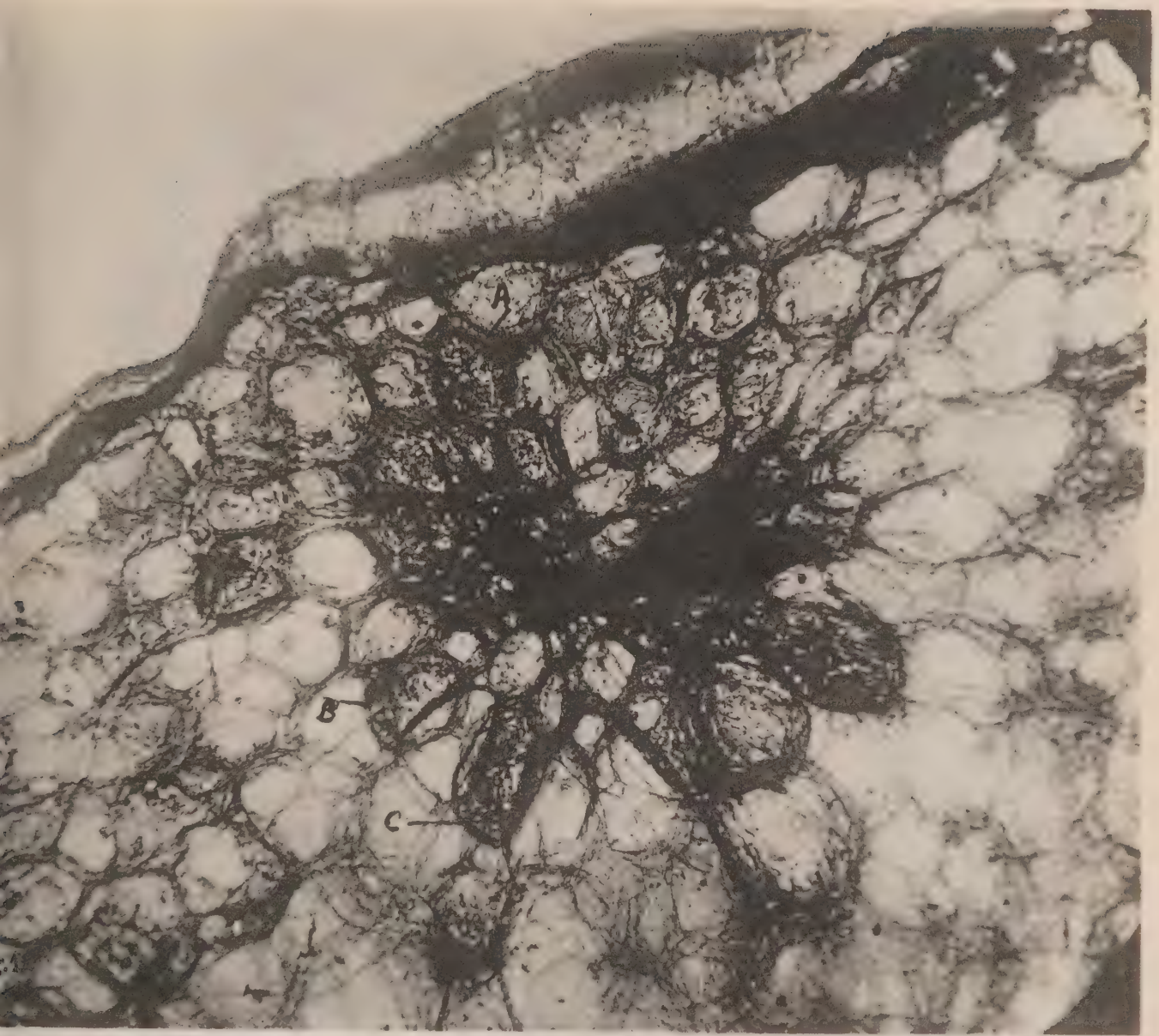

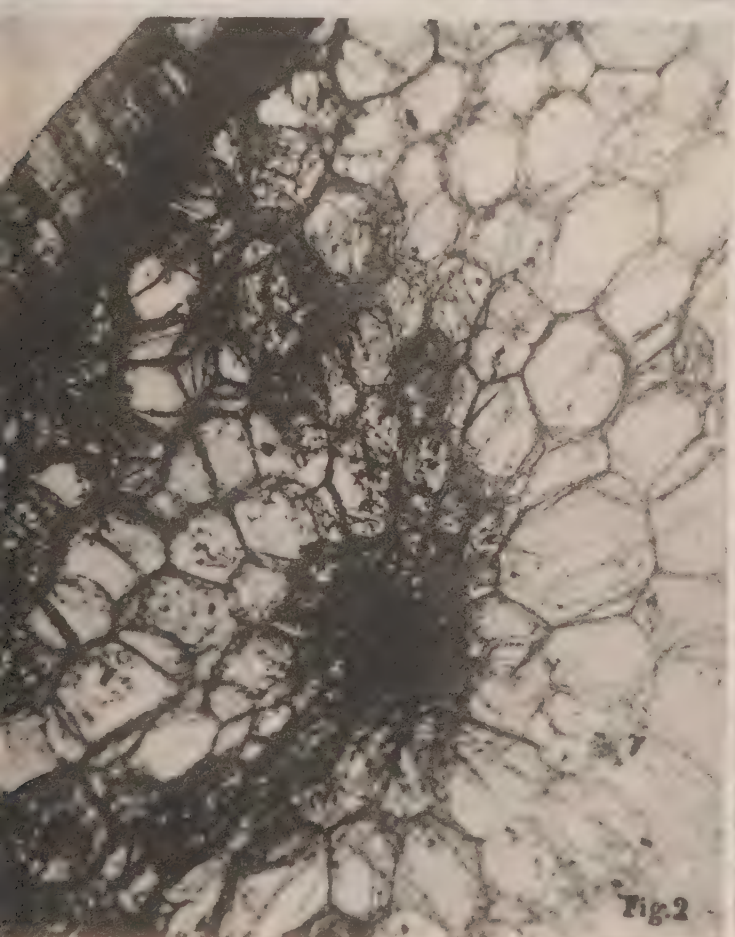

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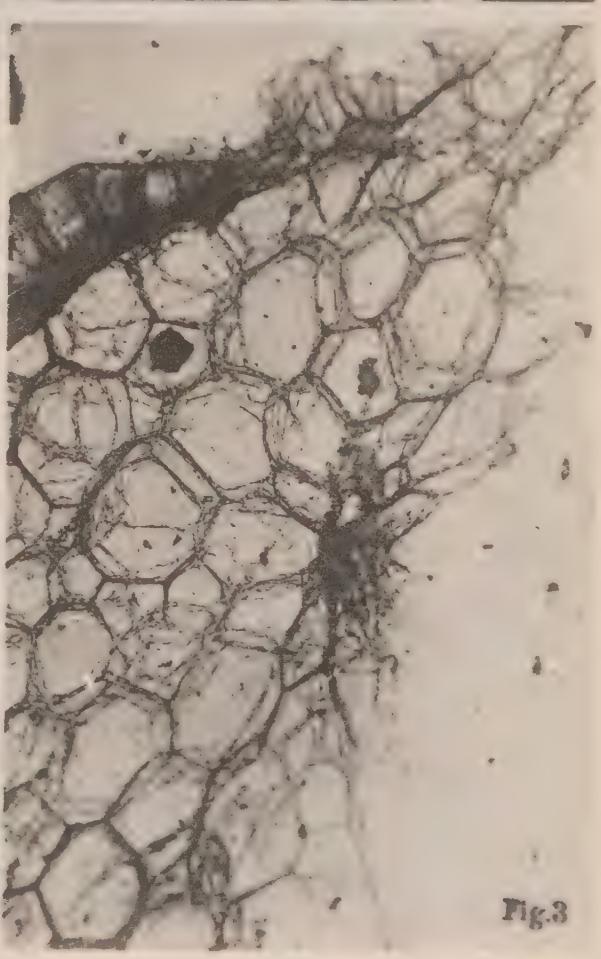

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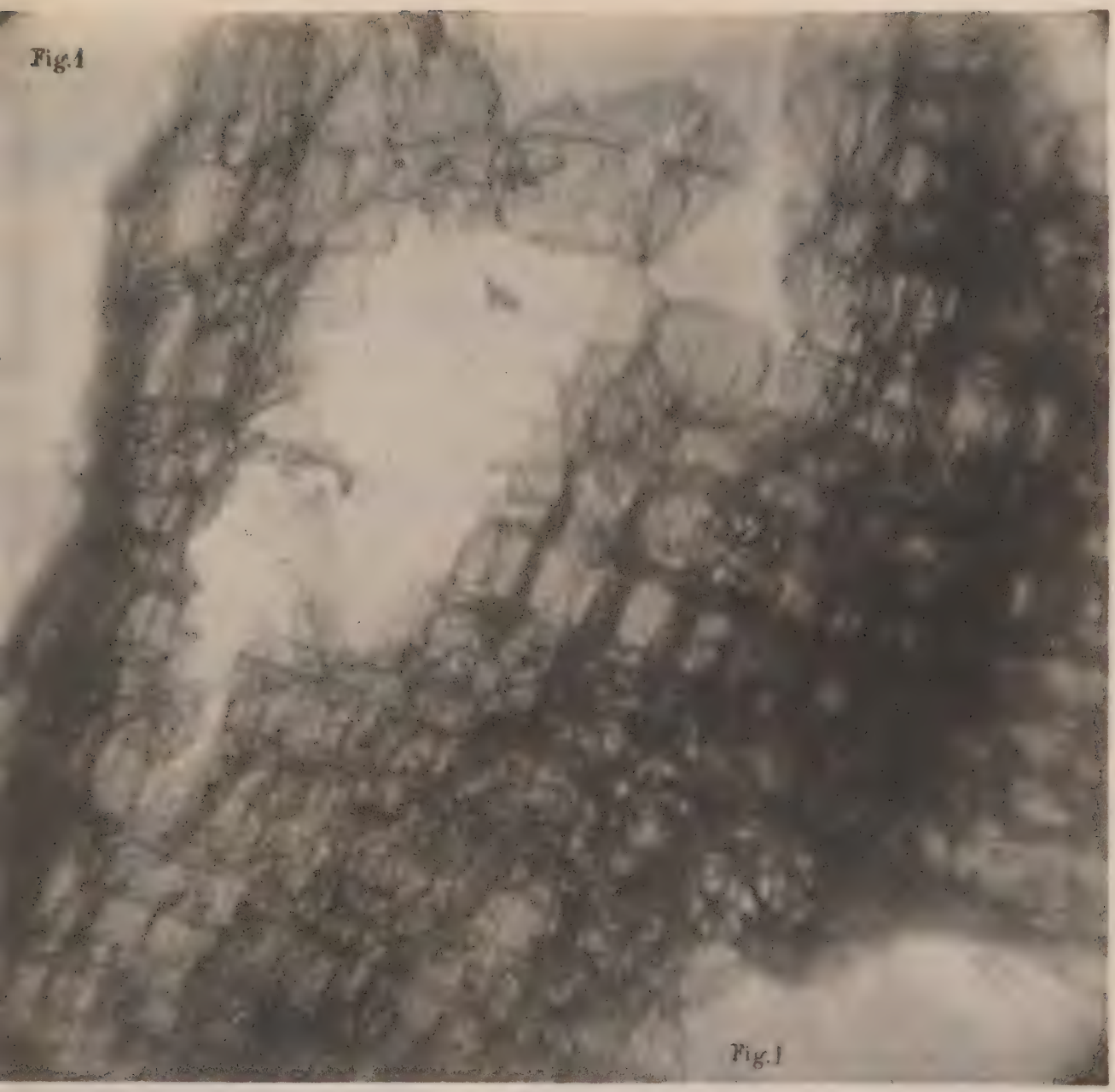

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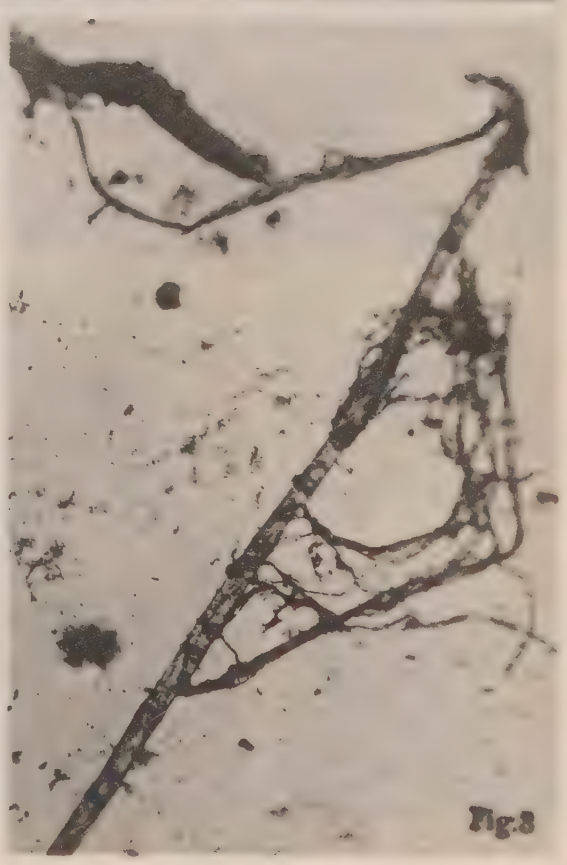

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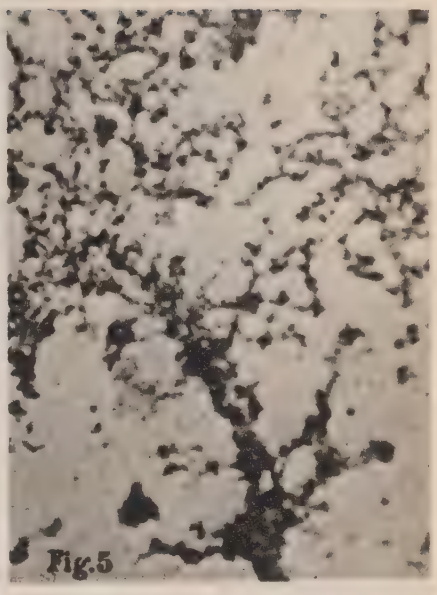

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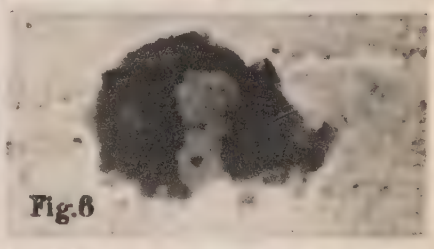

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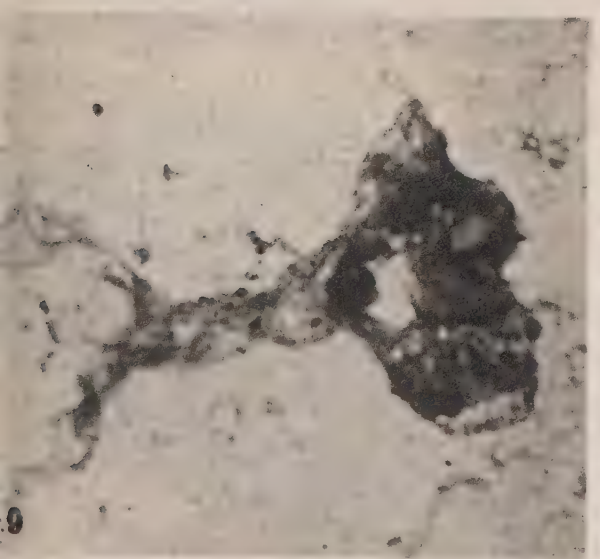

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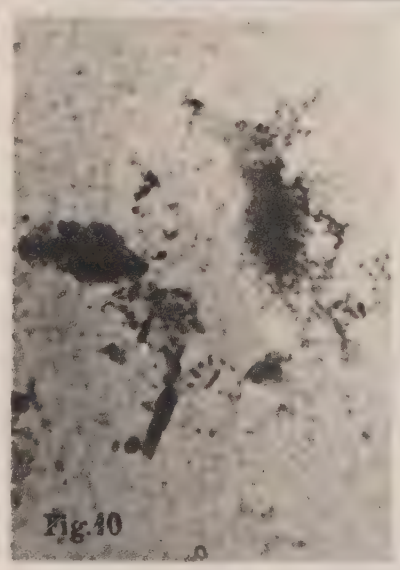

Fig.10

Fig.11

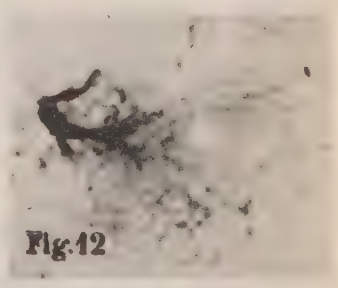

Fig.12

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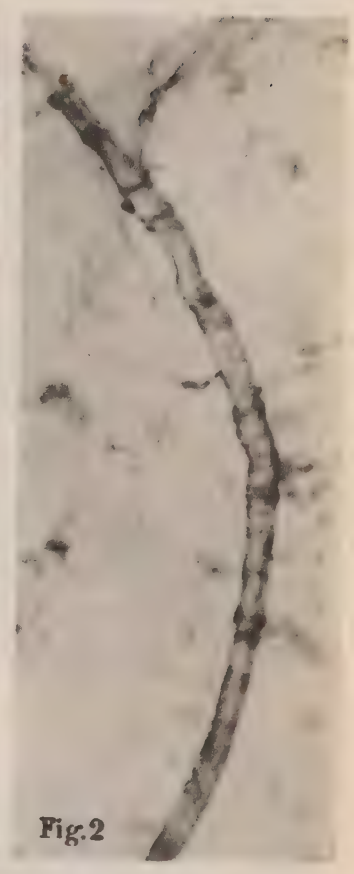

Fig.2

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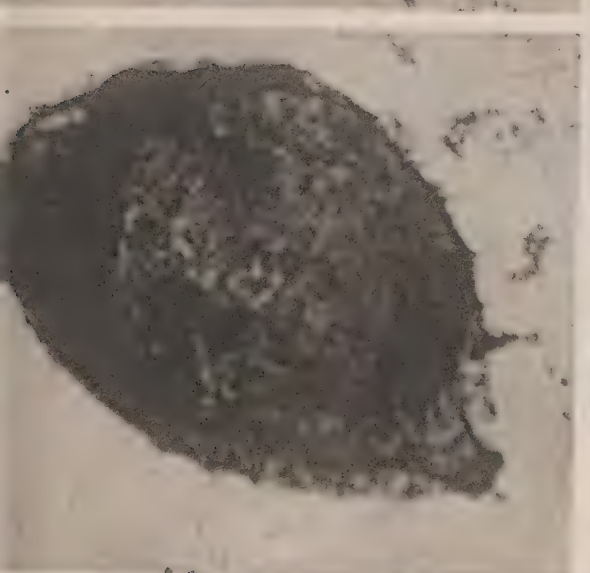

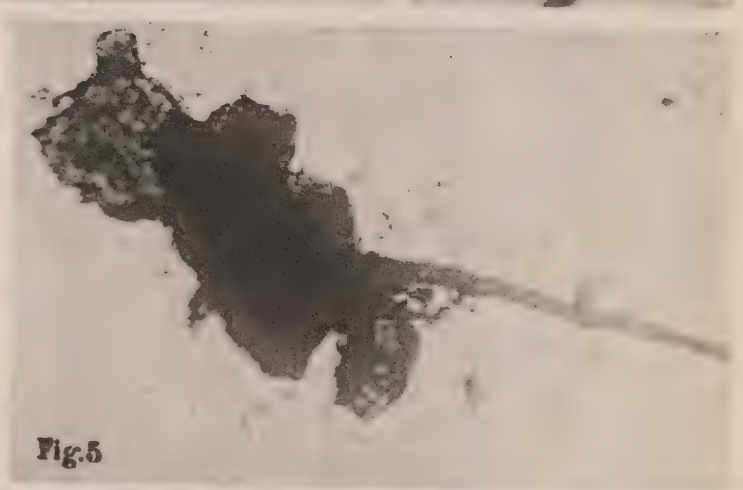

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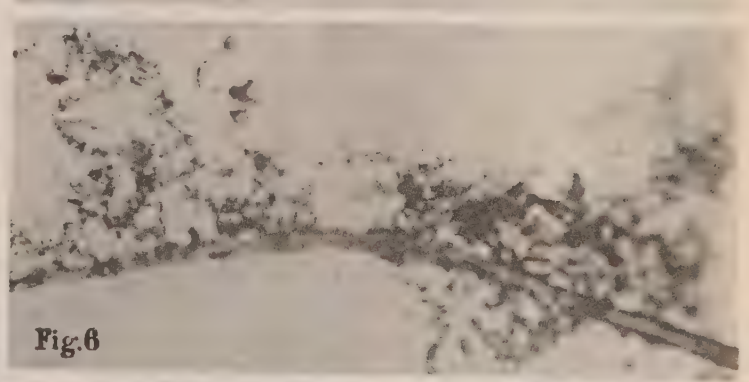

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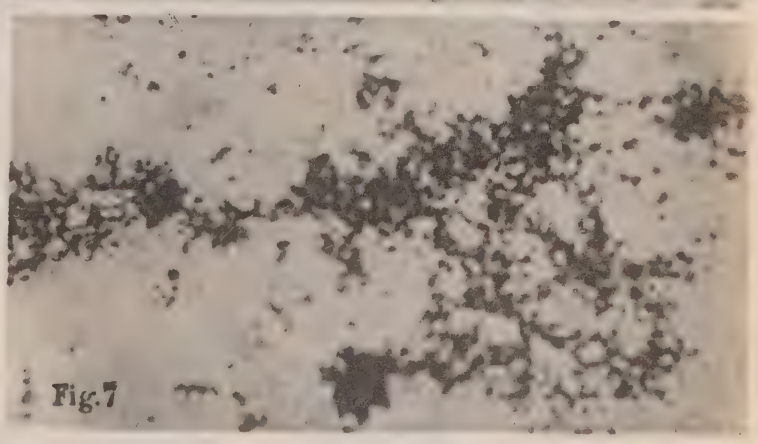

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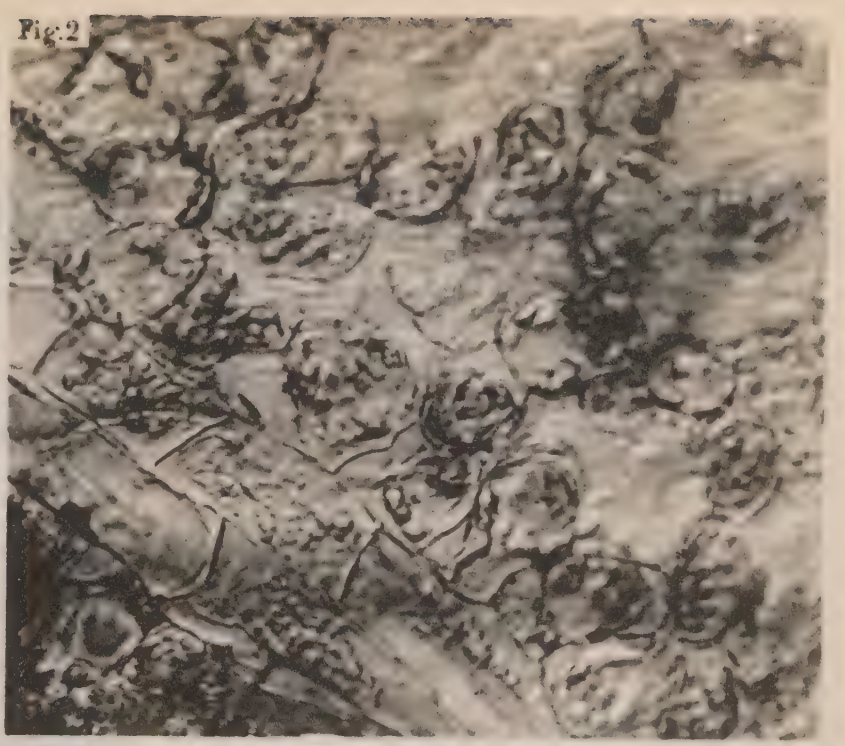

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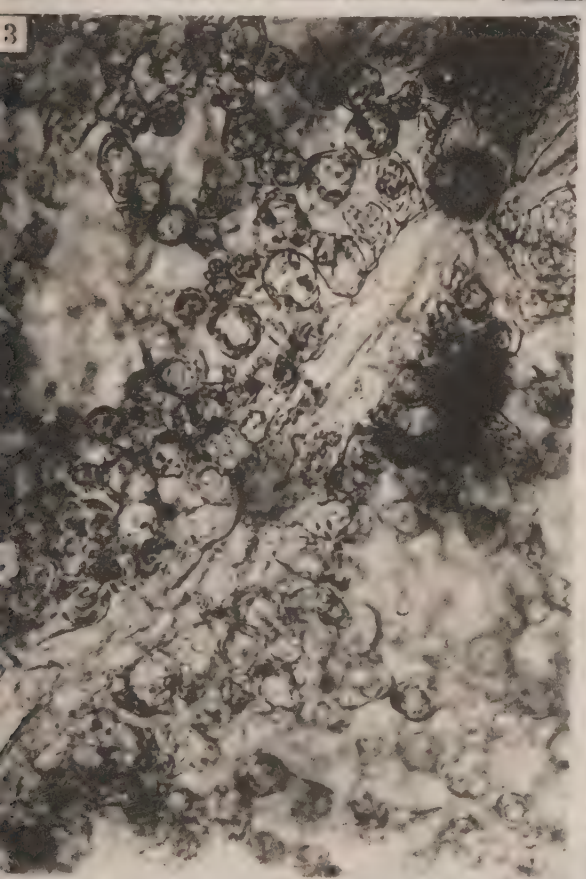

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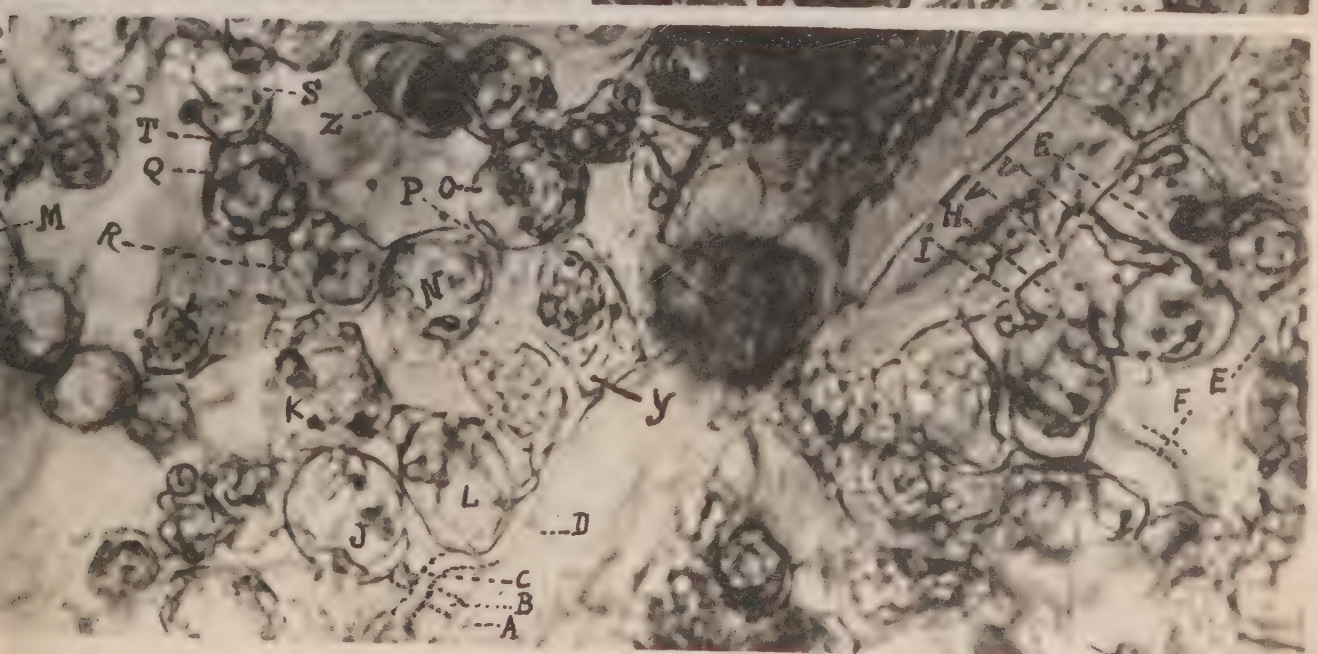

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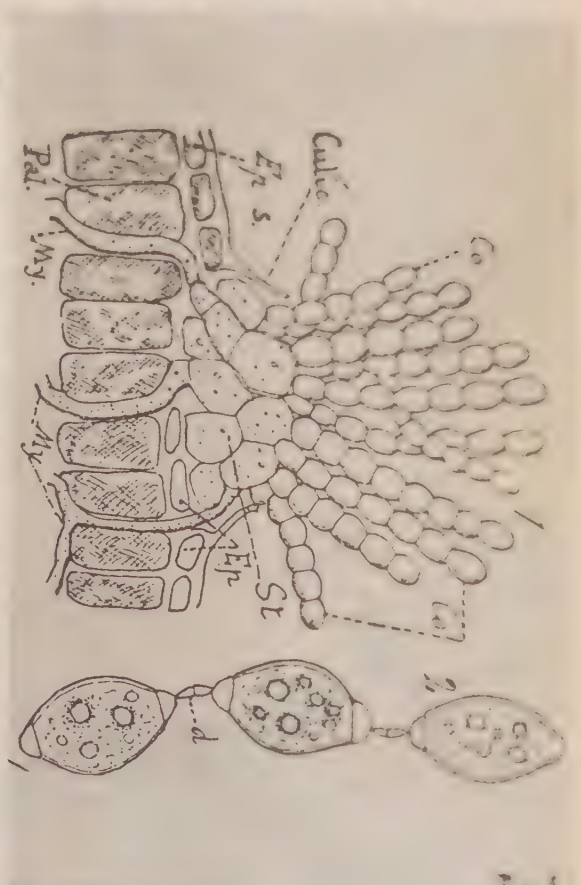
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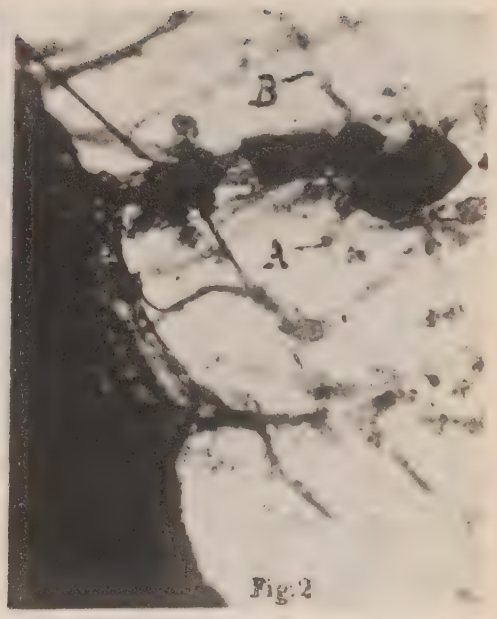

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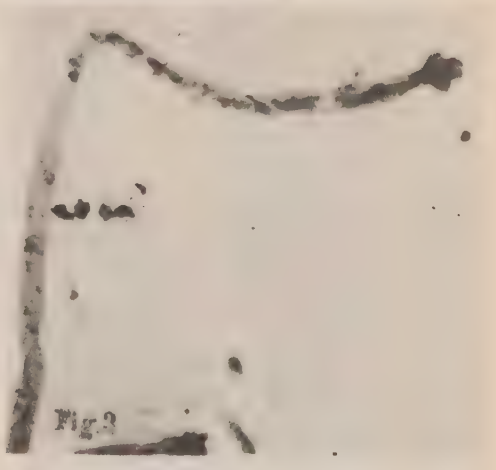

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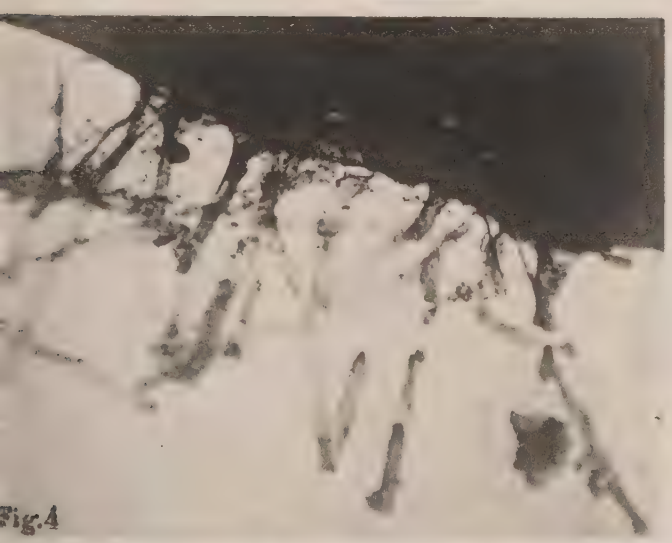

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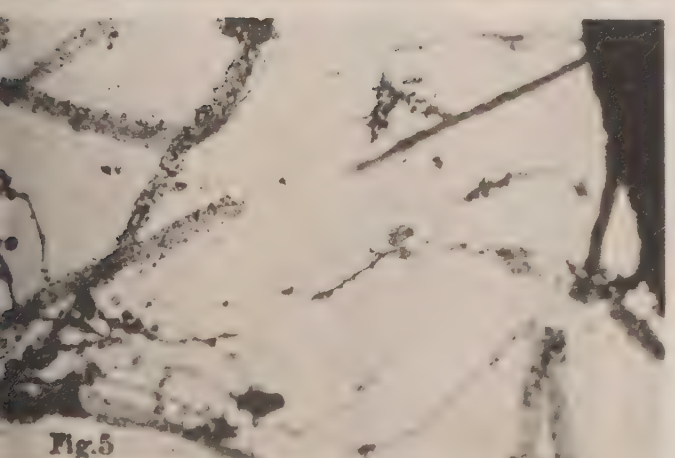

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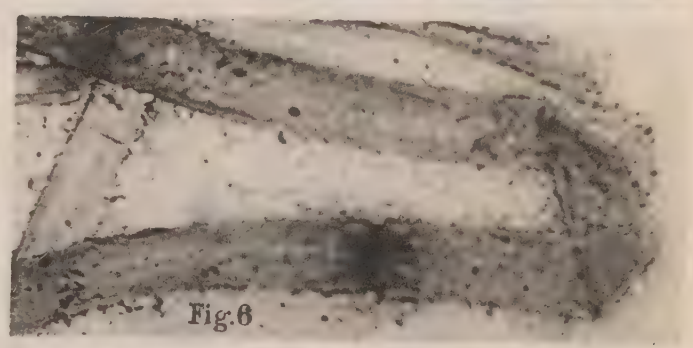
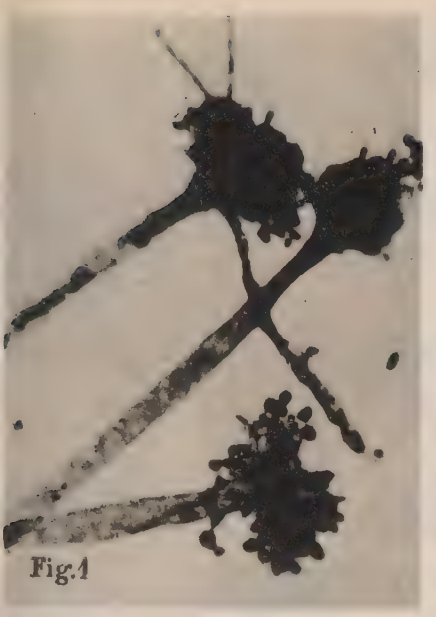


Fig.6

Fig.7

Fig.8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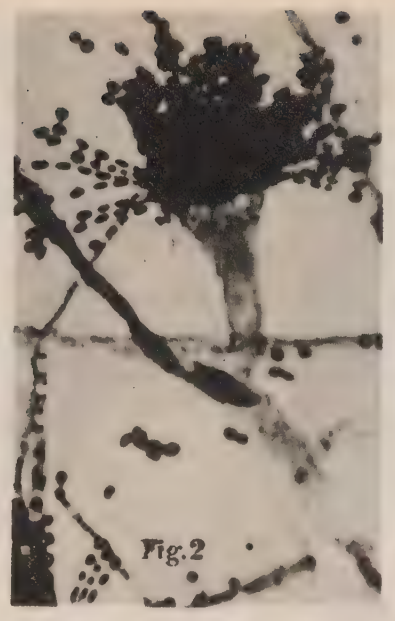
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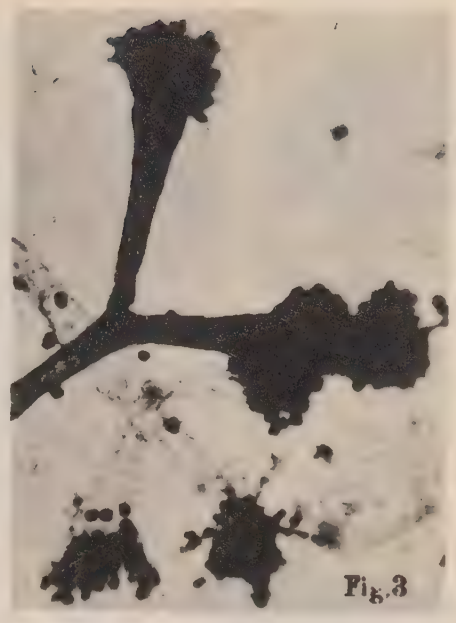
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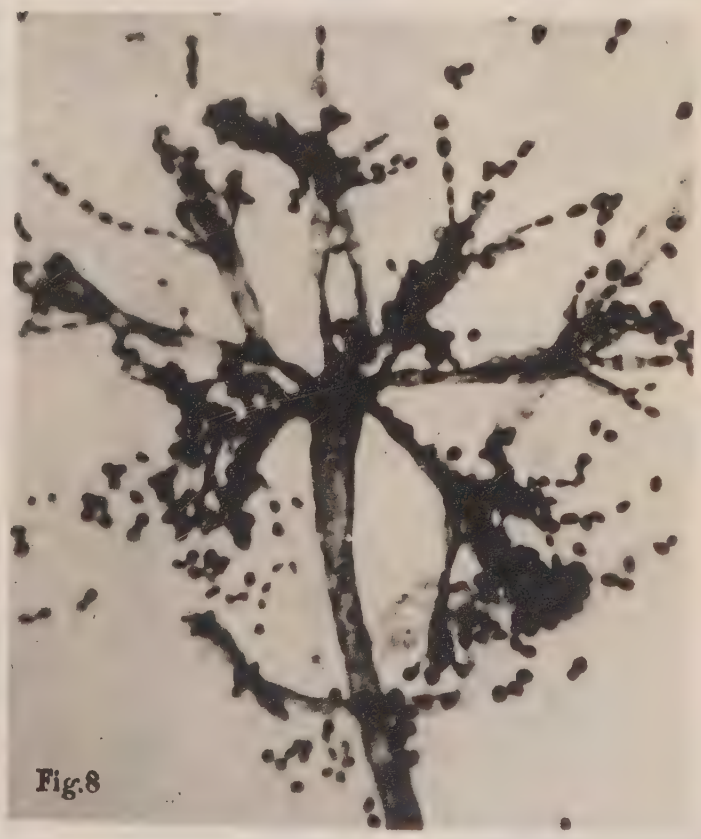
Fig.8

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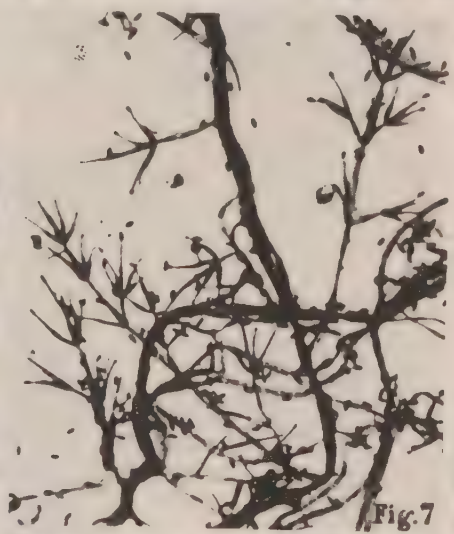
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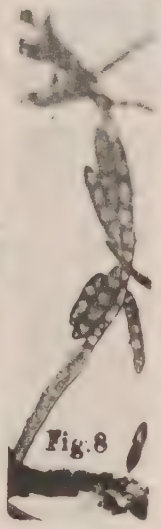
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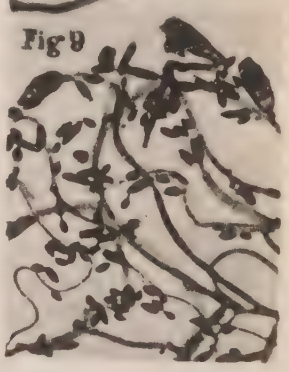

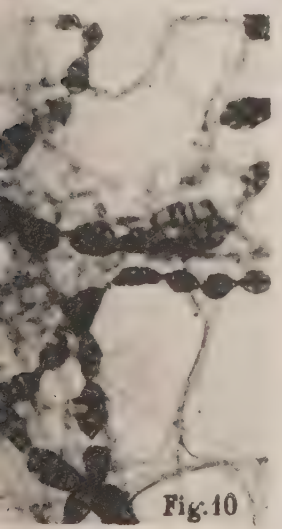
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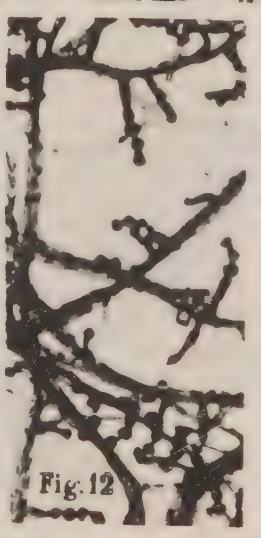
Fig.11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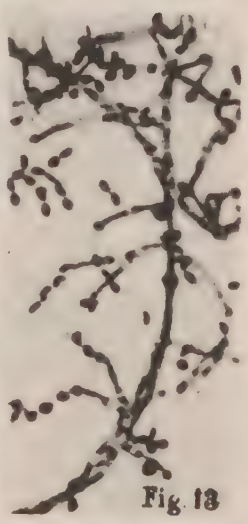
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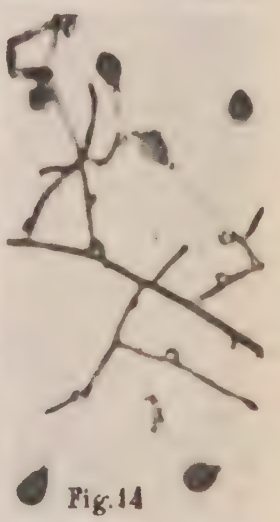
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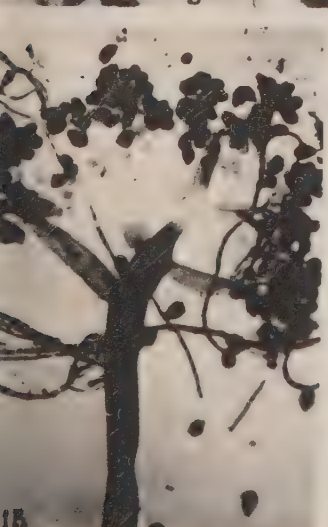
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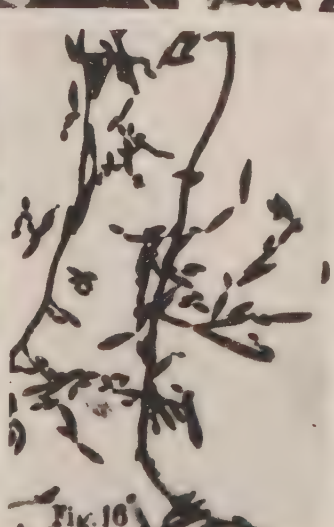
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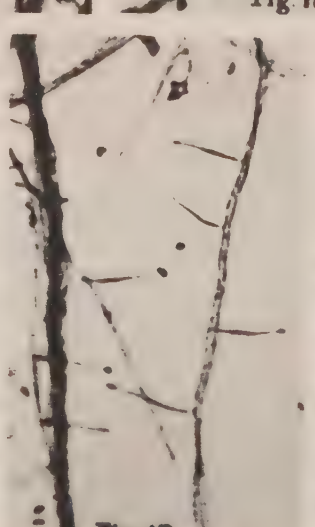
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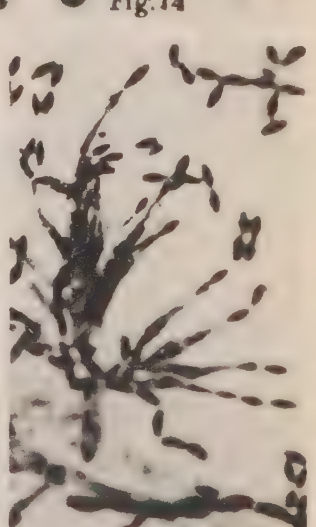
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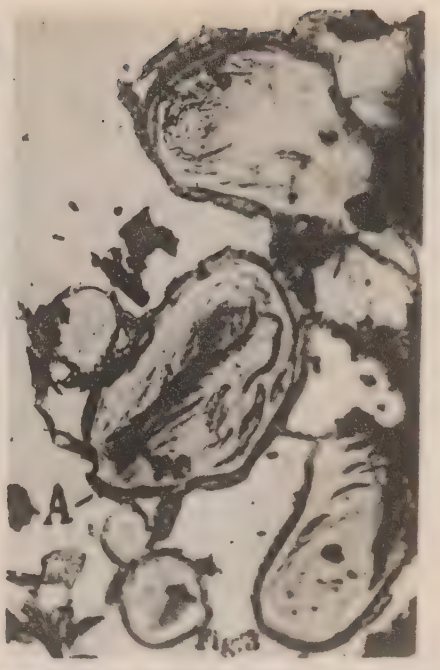
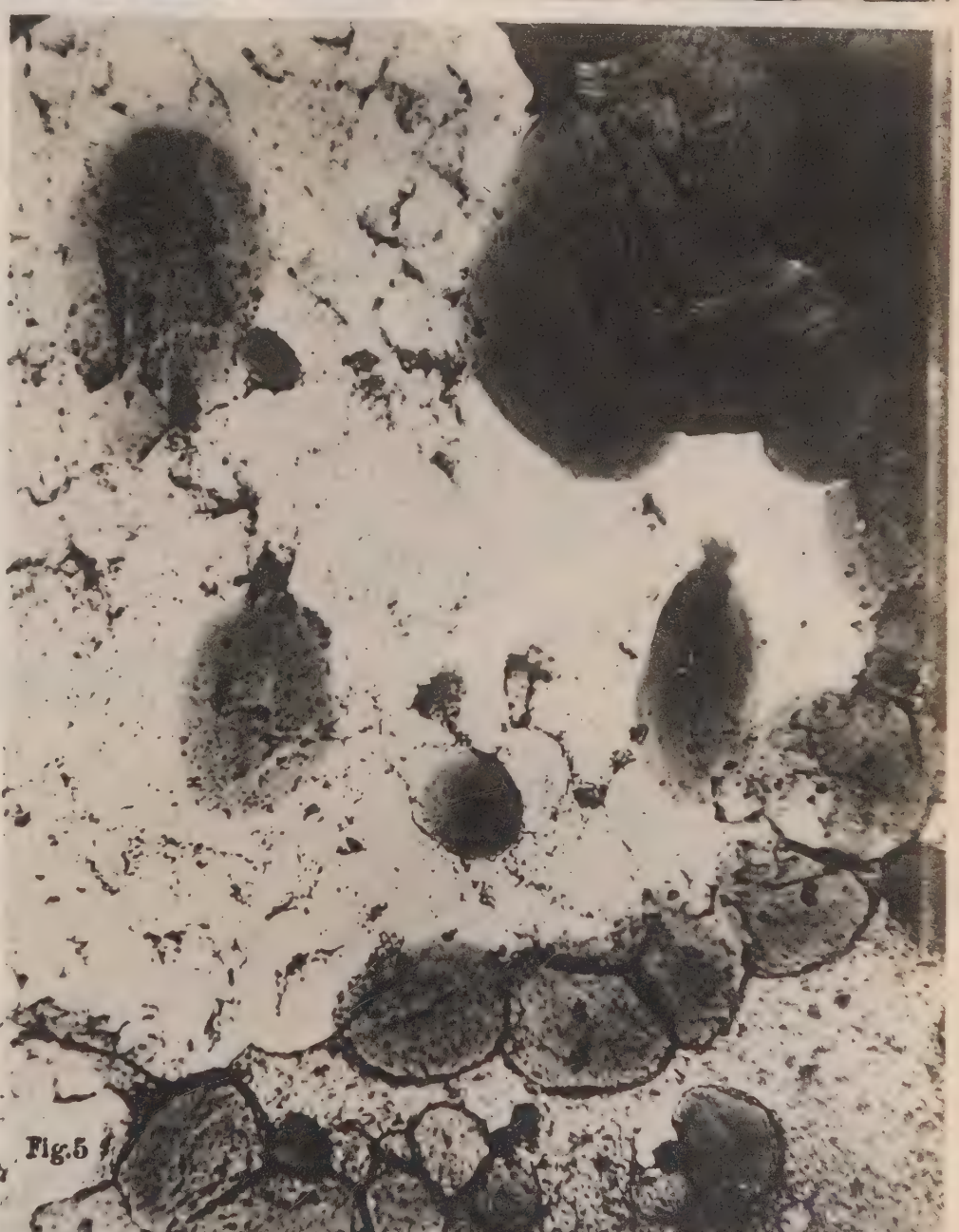


Fig.3

Fig.4

Fig.1

Fig.2



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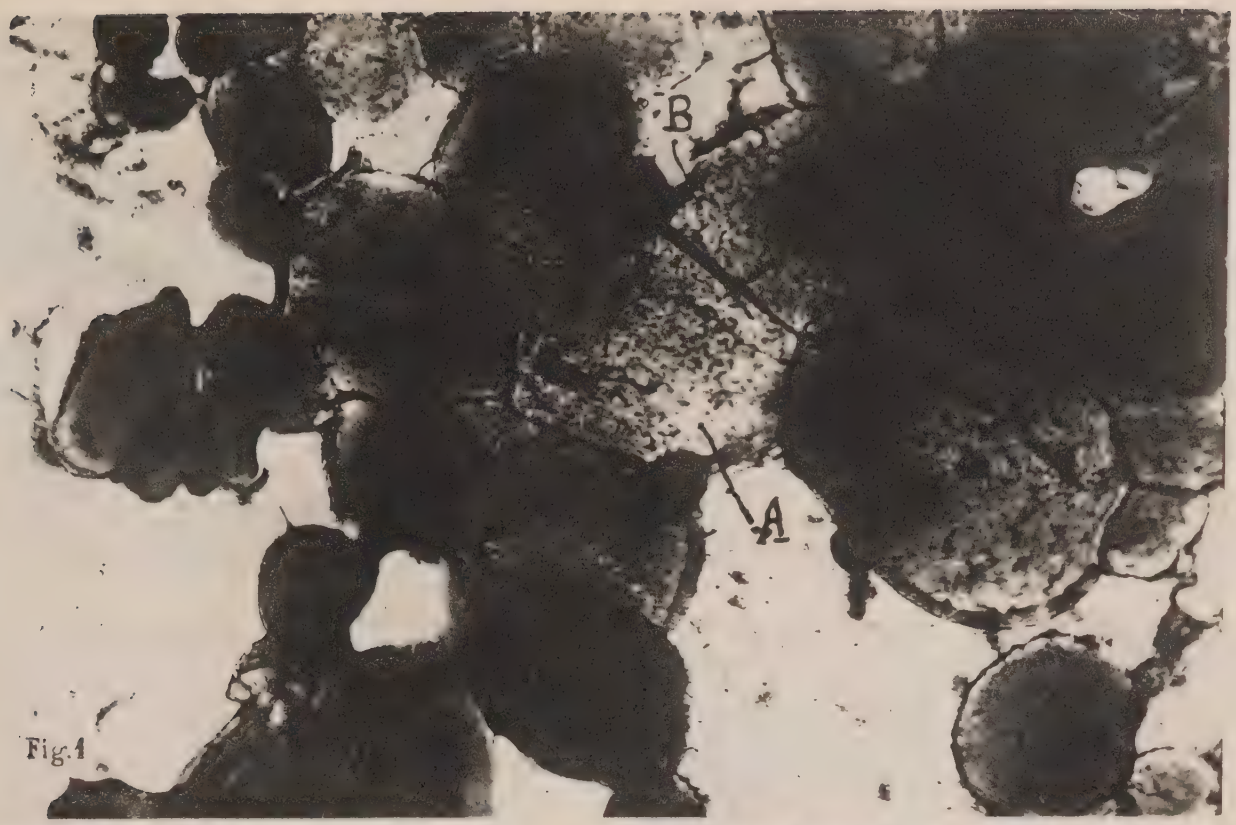

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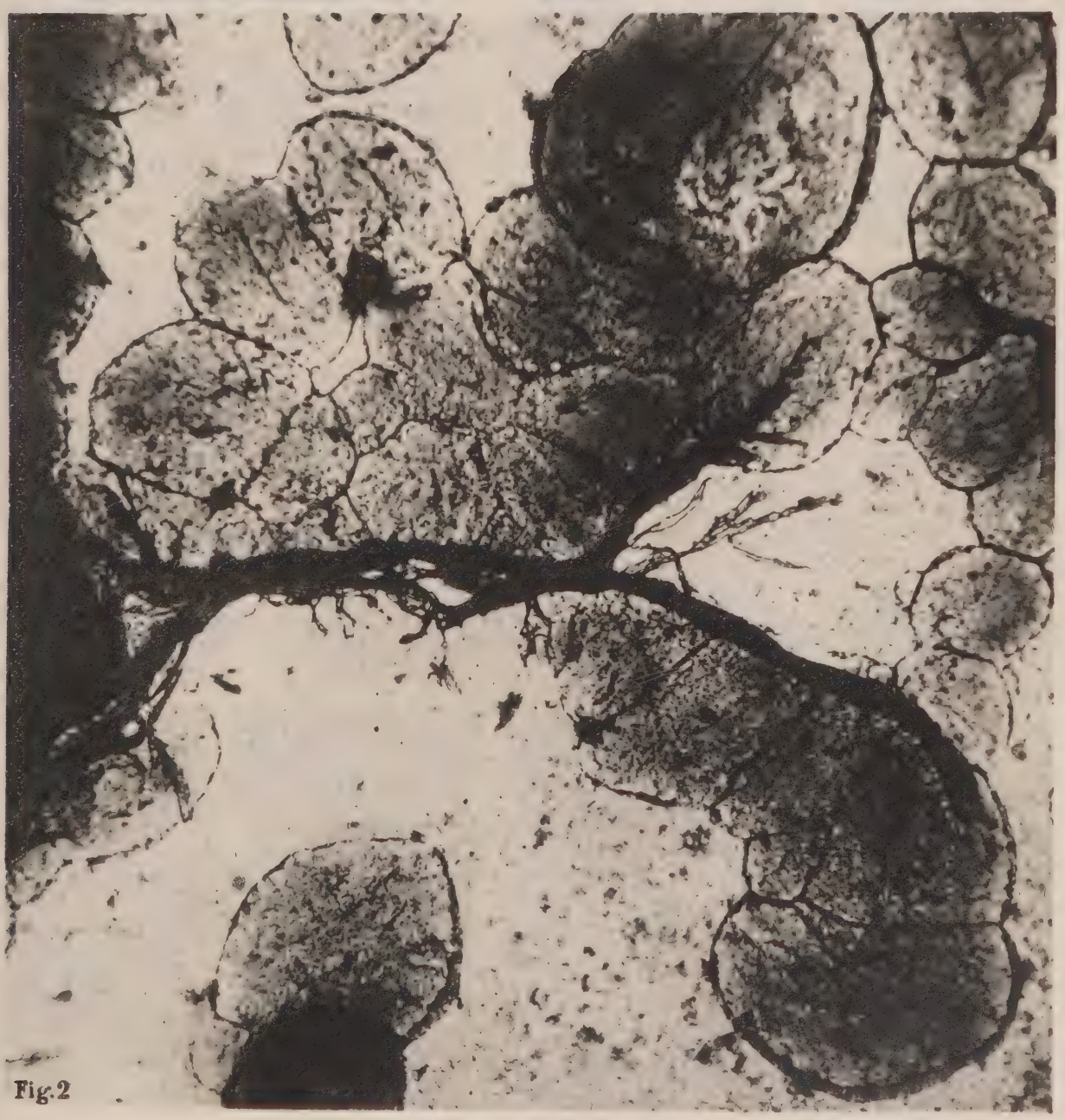

Fig.2

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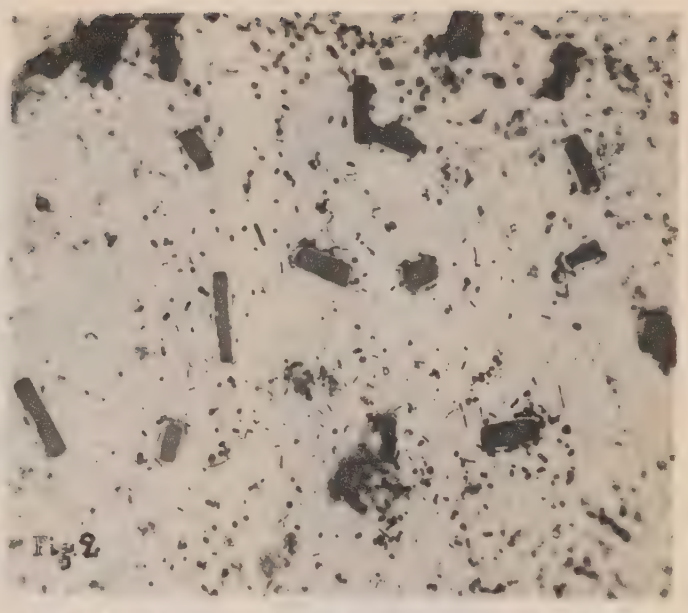
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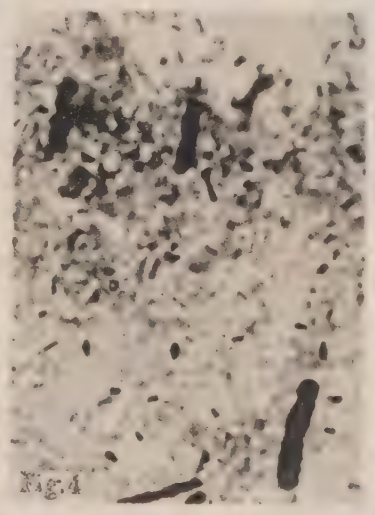
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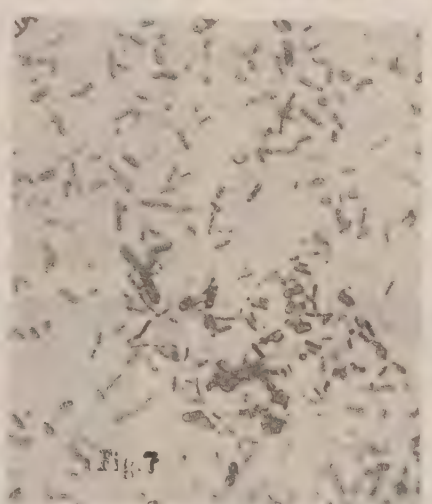
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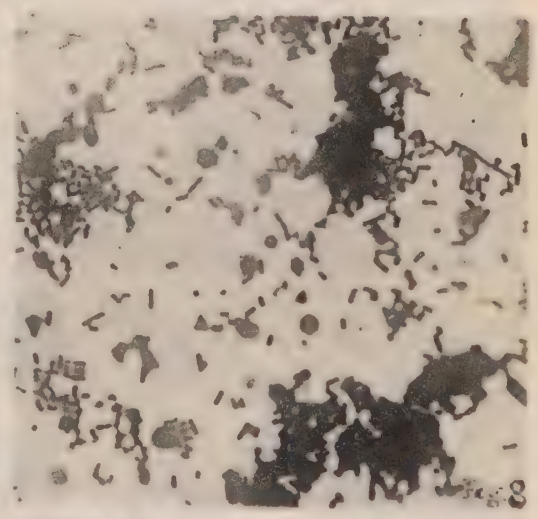
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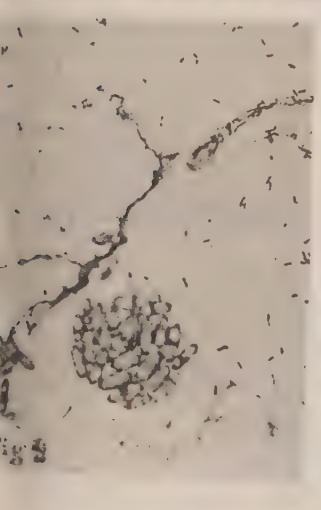
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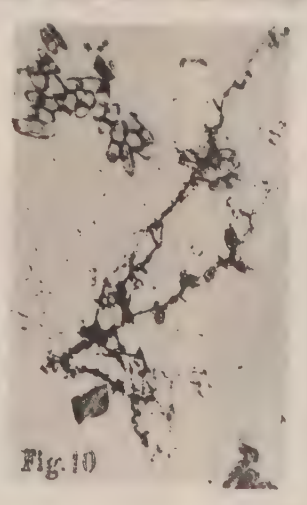
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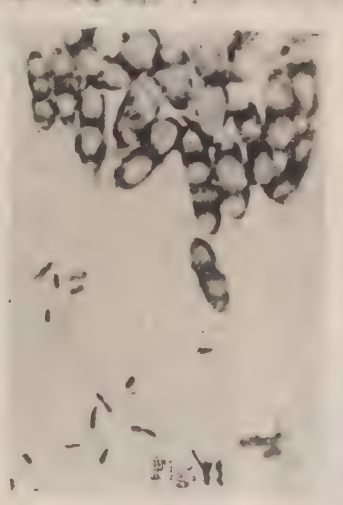
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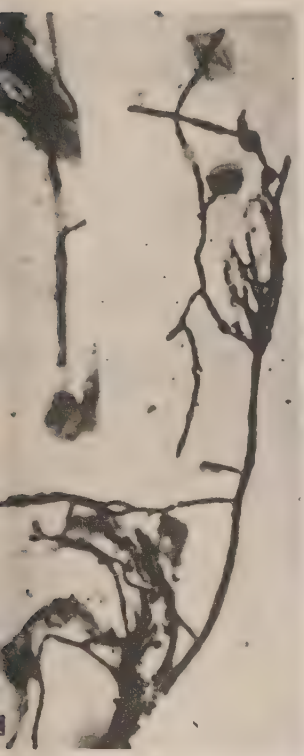
Fig.12



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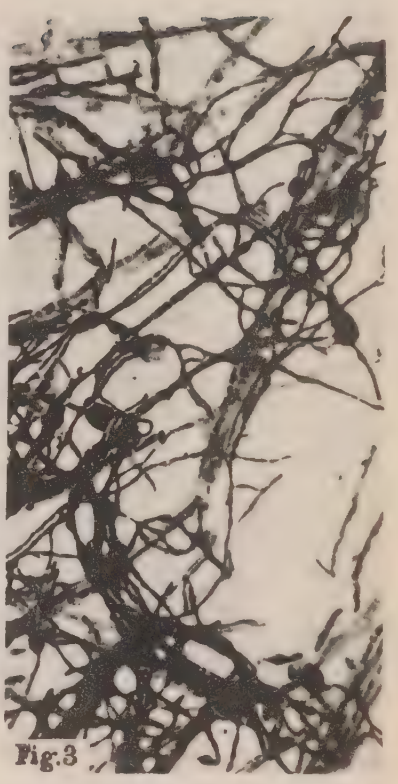

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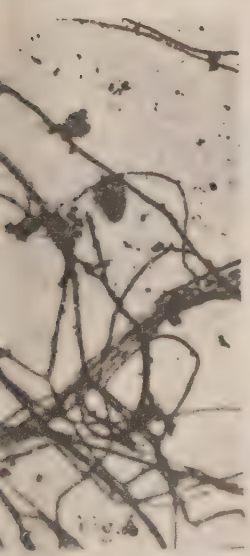

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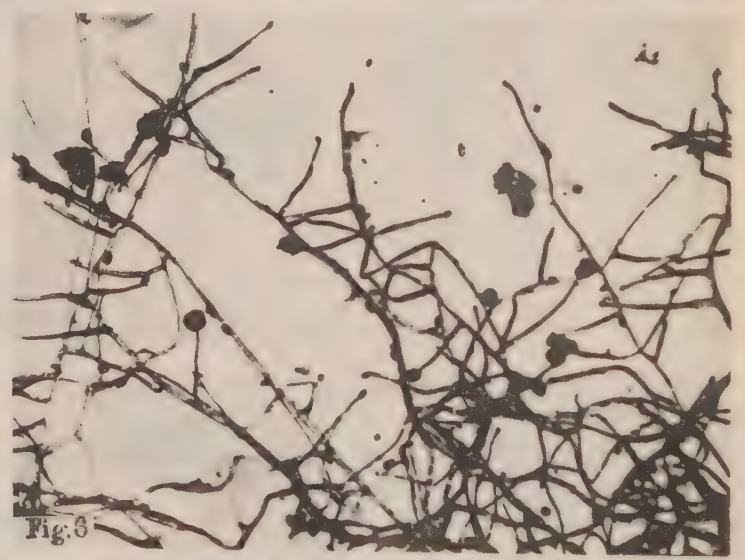

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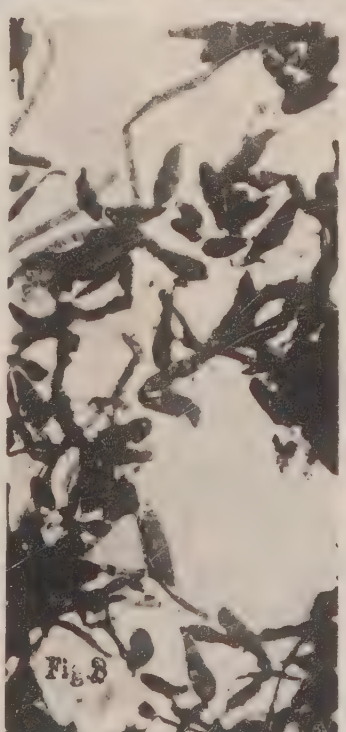
Fig.7



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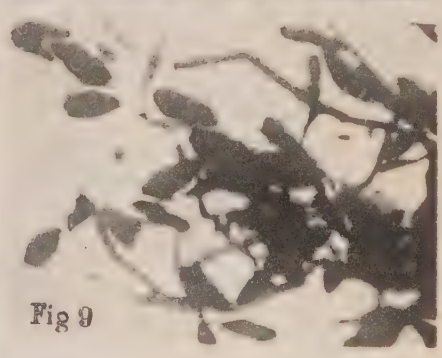

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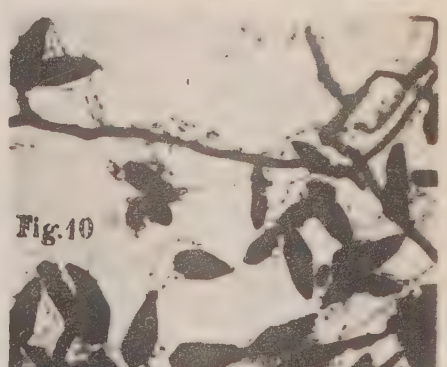

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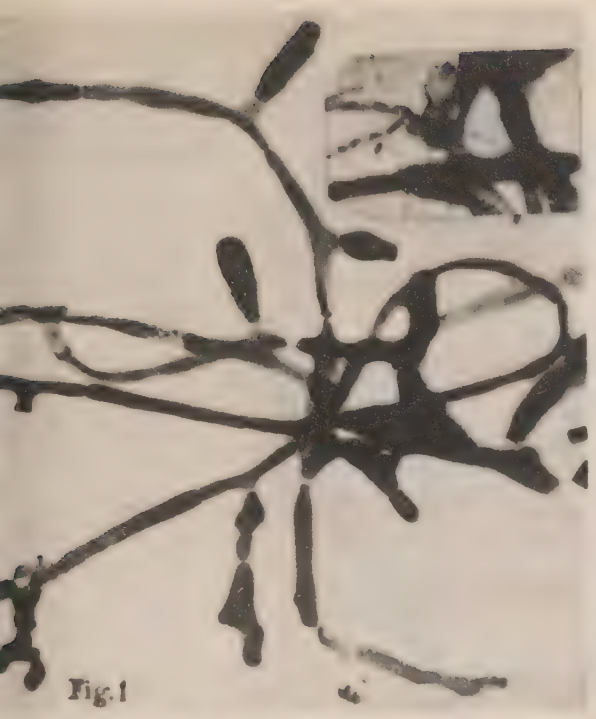

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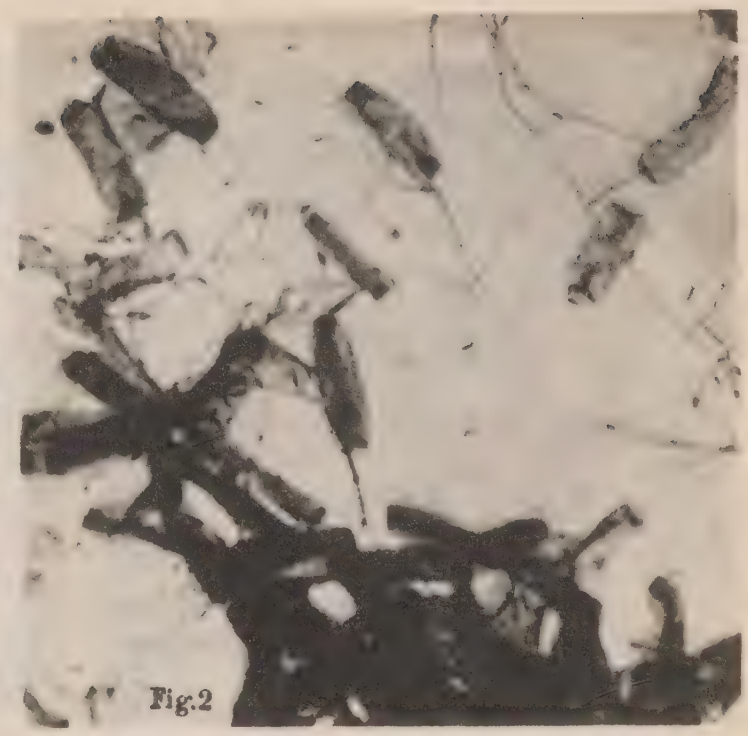

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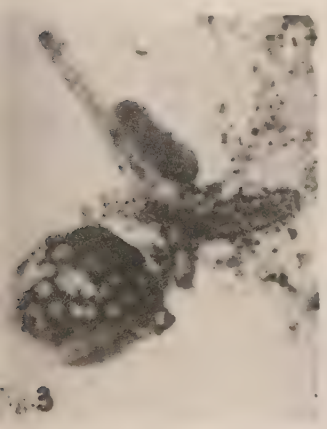

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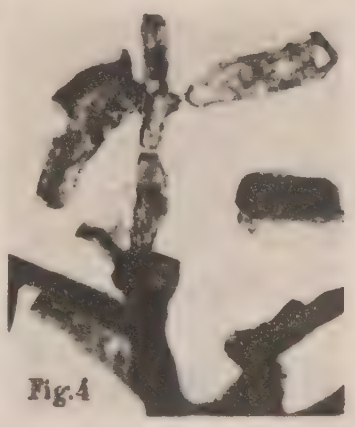

Fig.4

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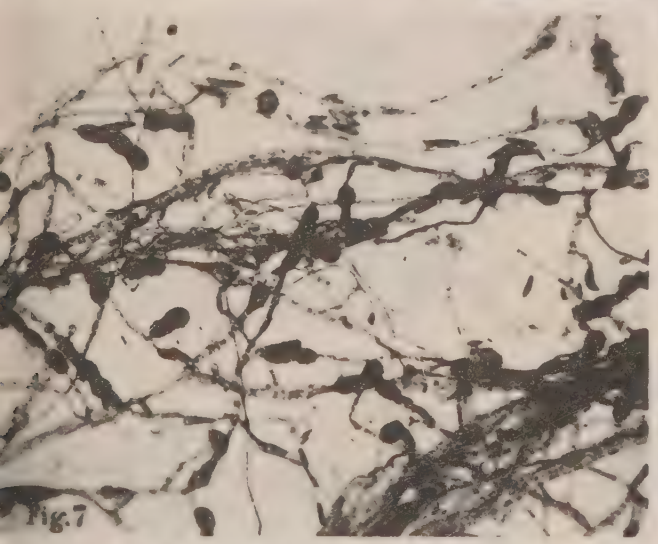
Fig.6



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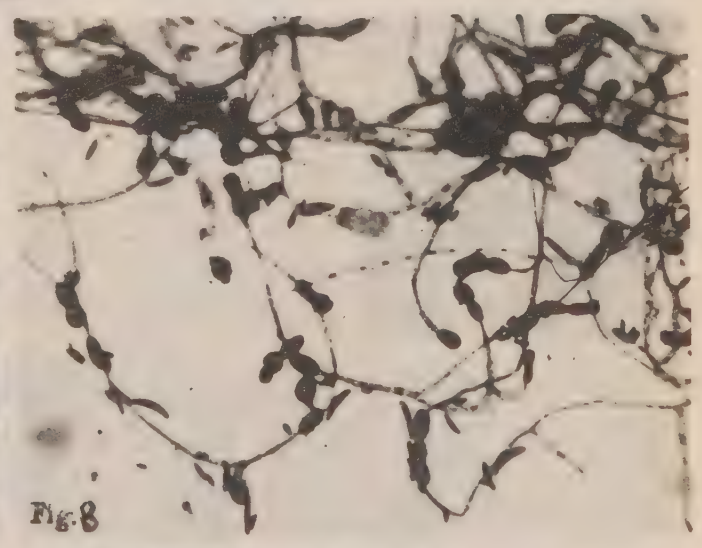

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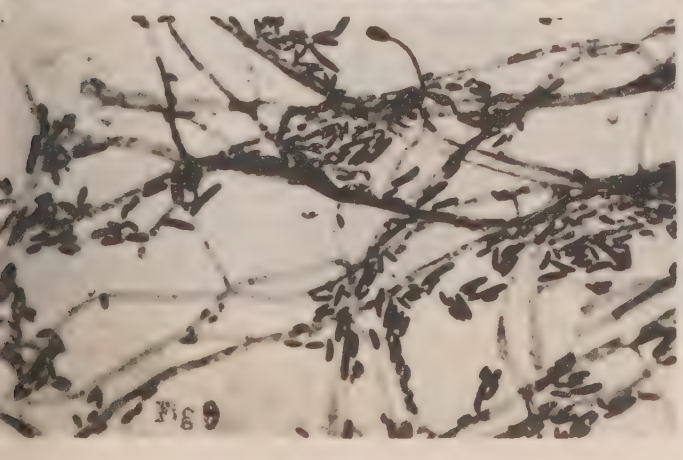

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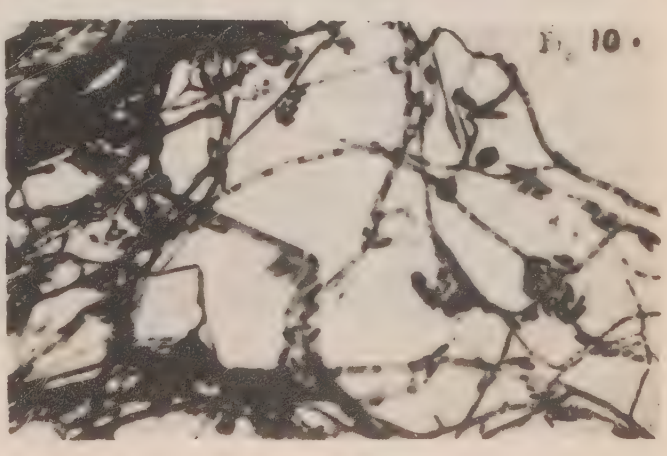

Fig.10

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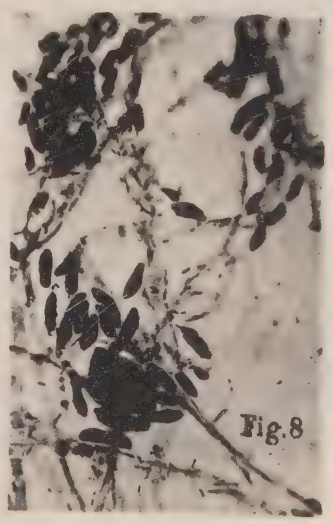
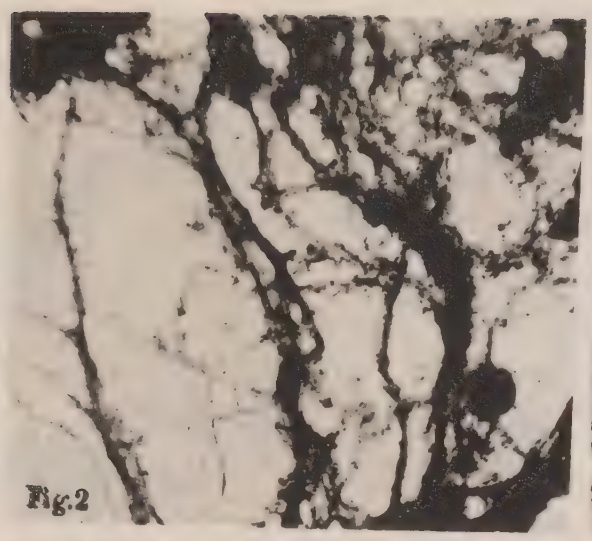


Fig.8

Fig 9

Fig.1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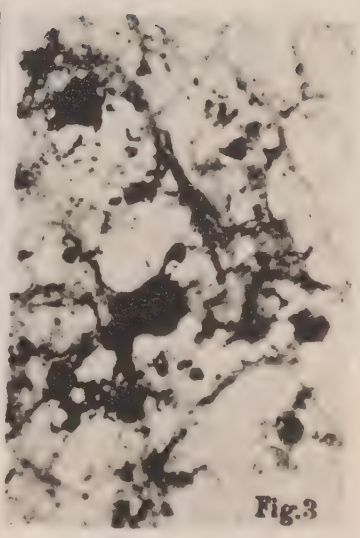
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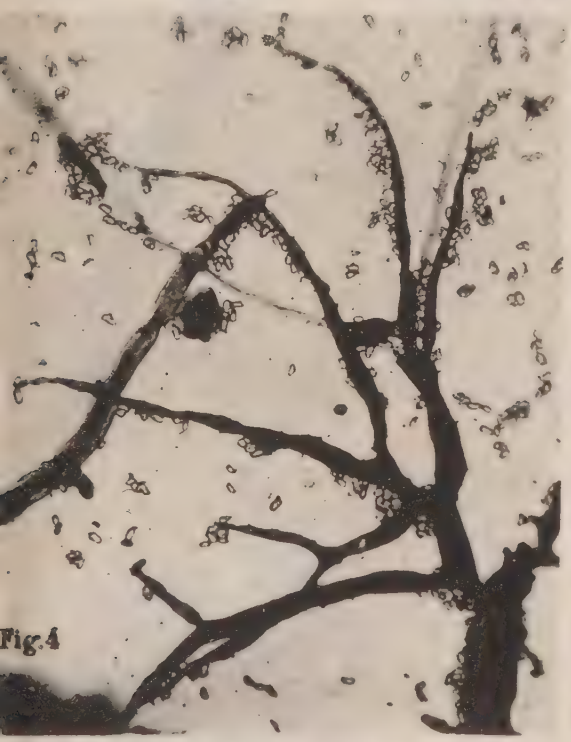
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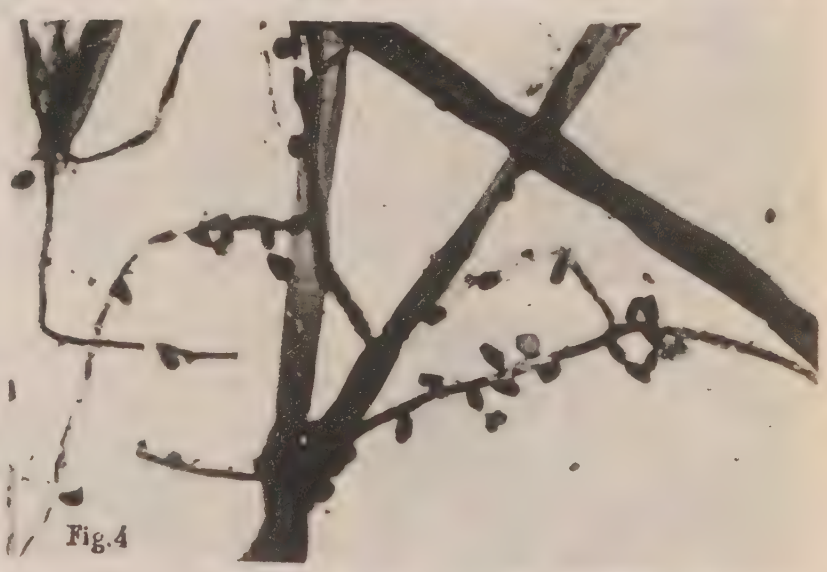

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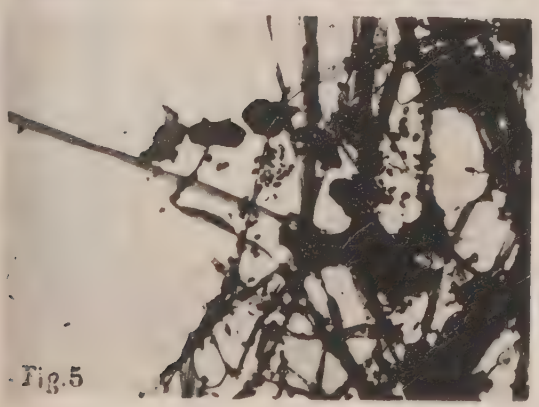

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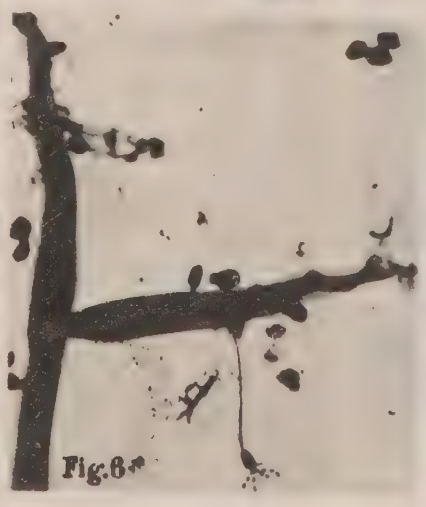

Fig.6

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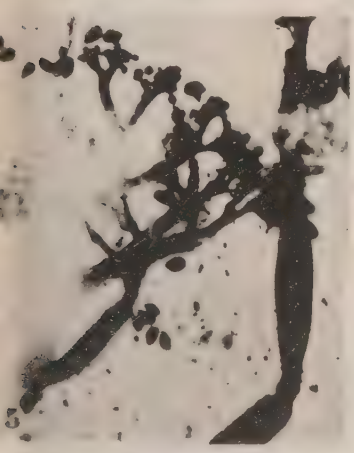


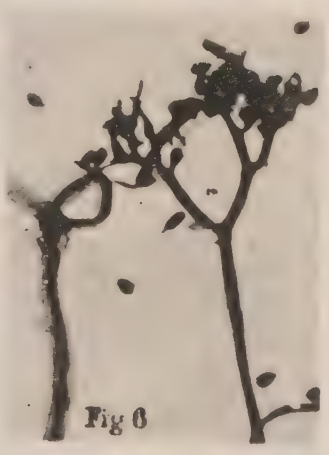
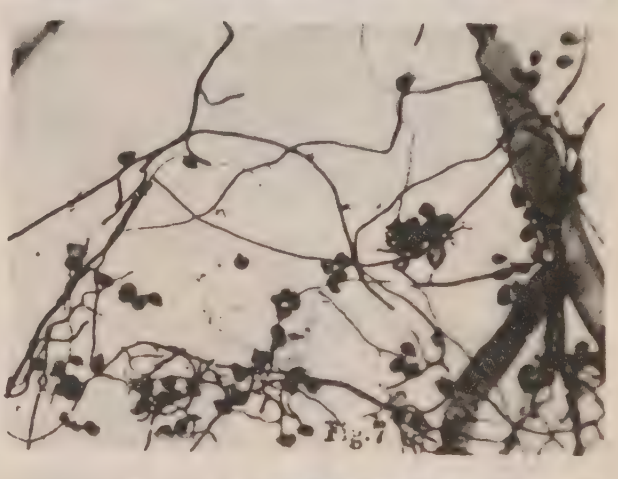


Fig 6



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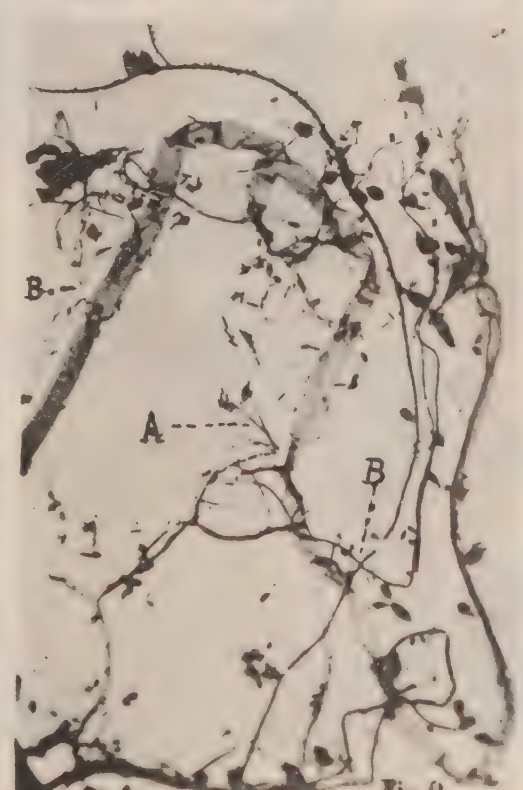


Fig 9

Fig.10

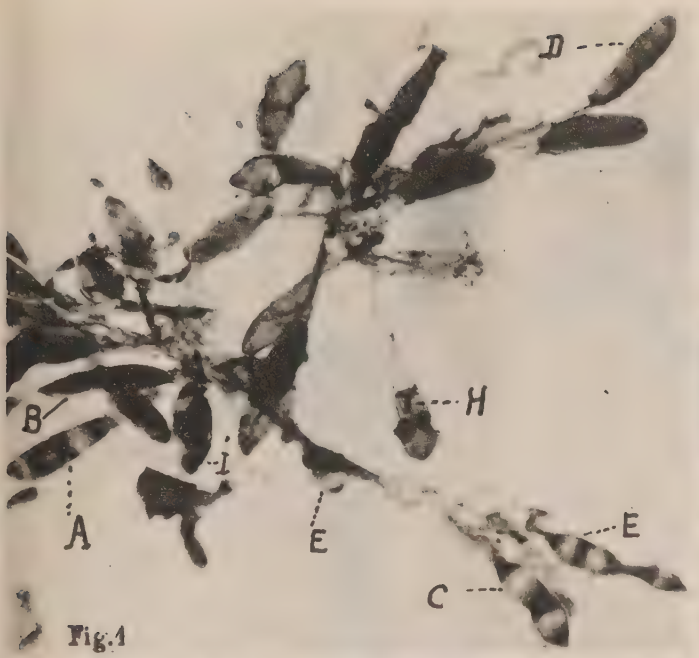
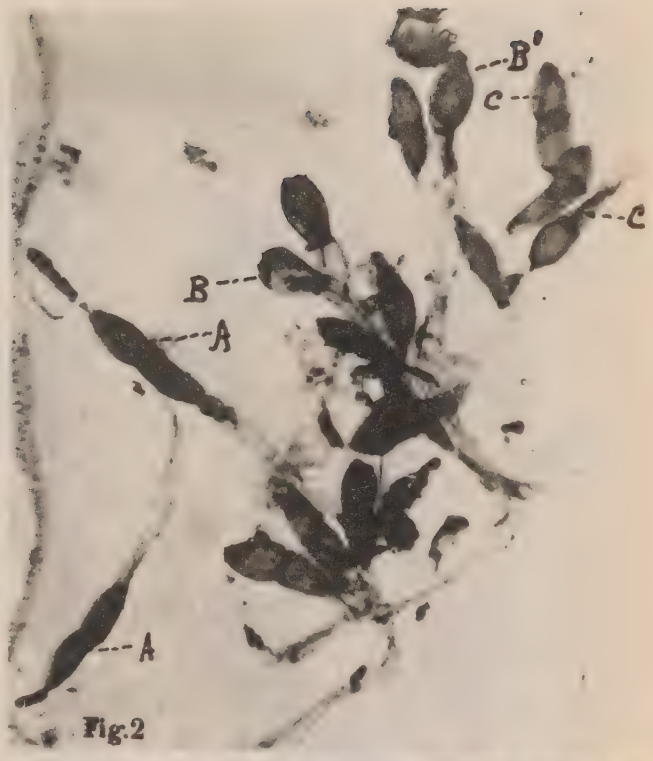


Fig.1



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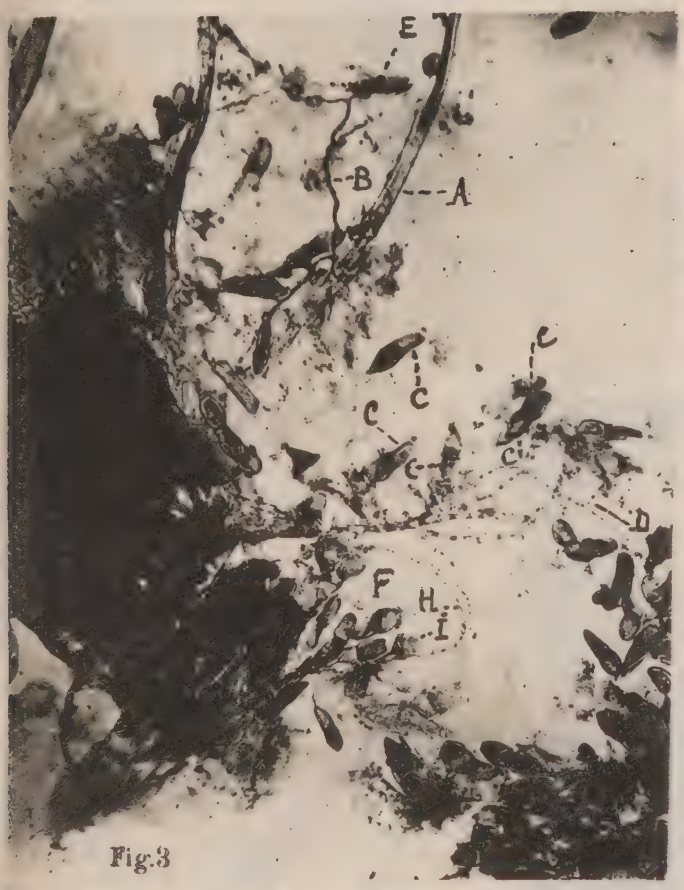

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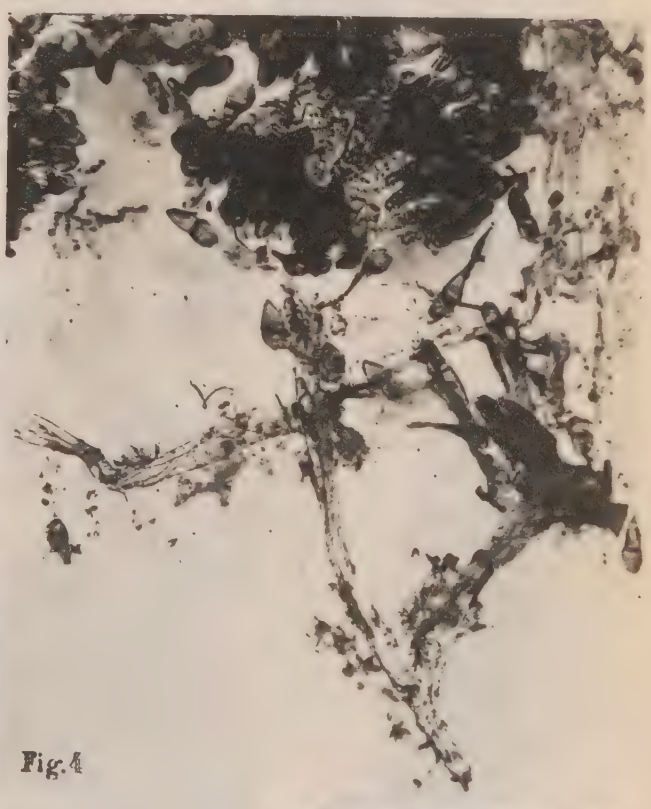

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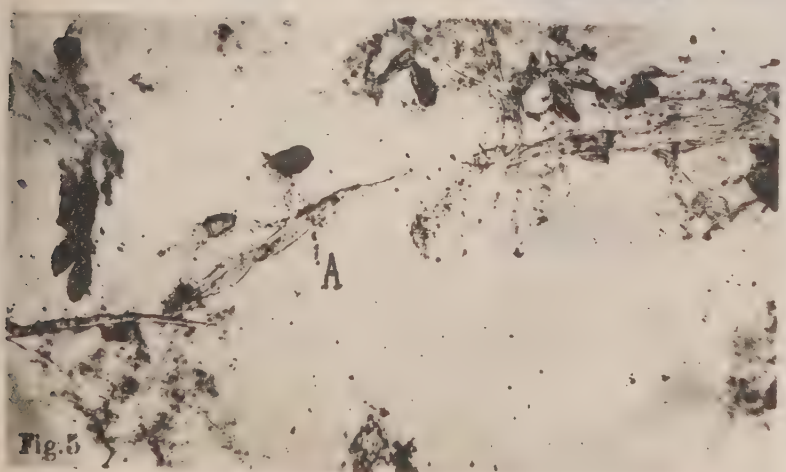

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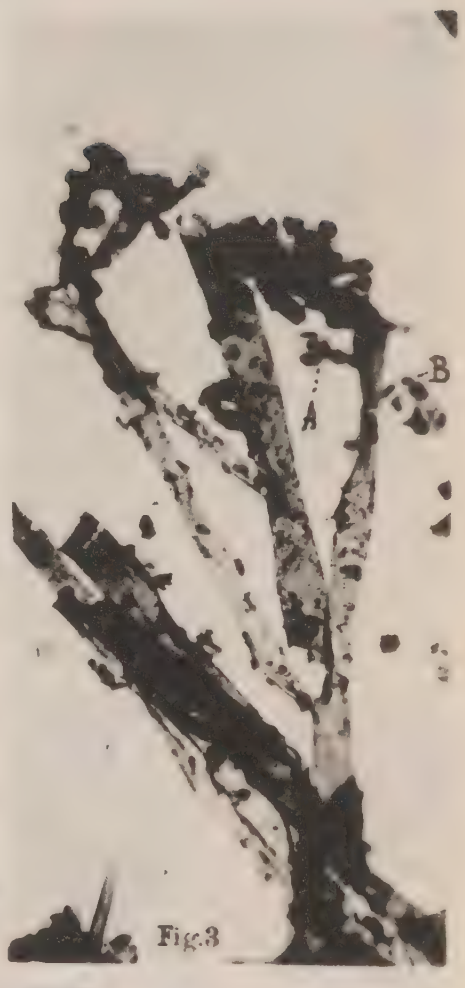

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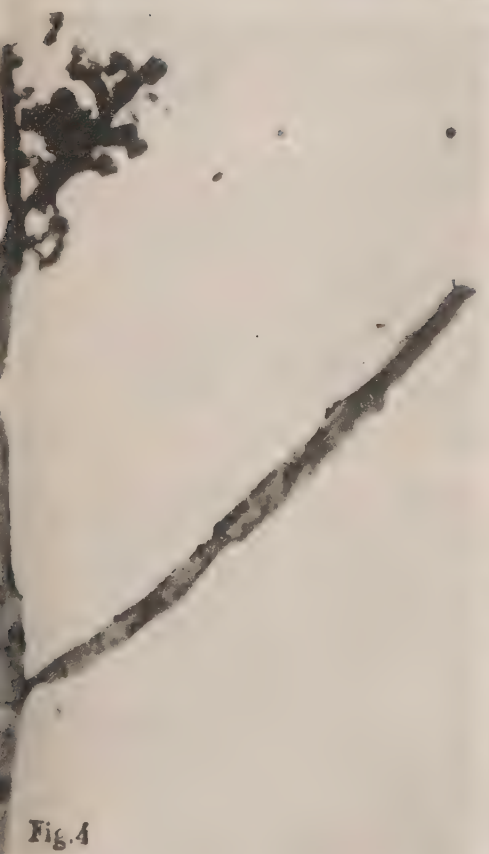

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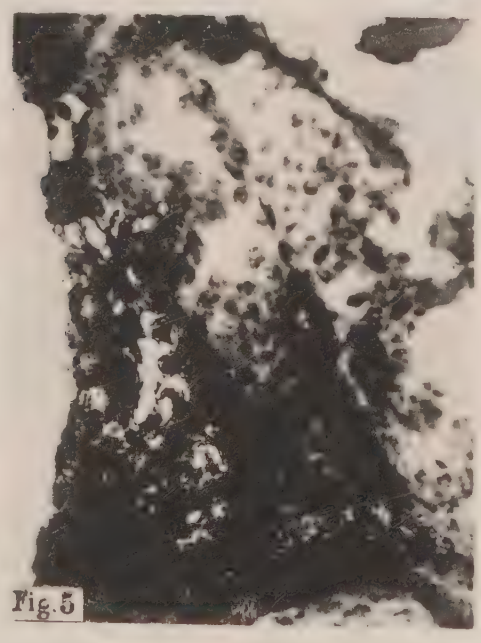

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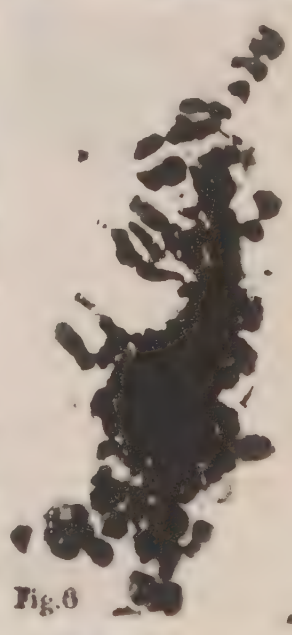

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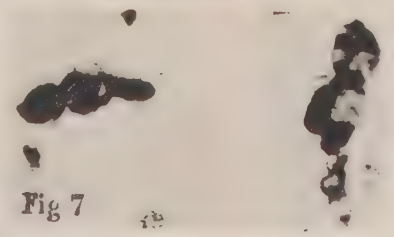

Fig 7

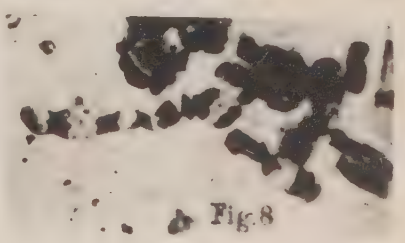

Fig.8

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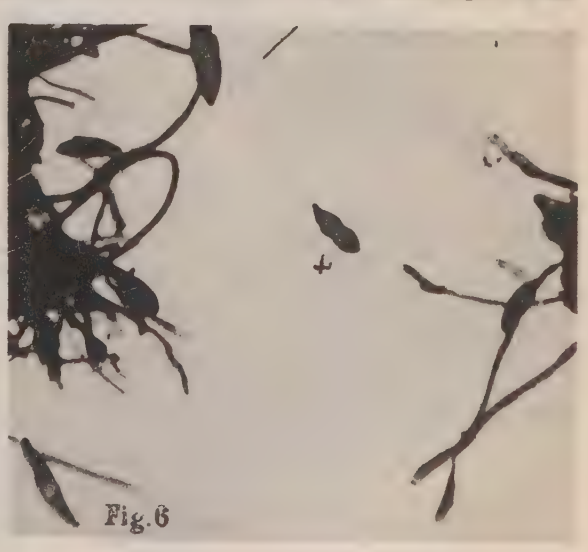

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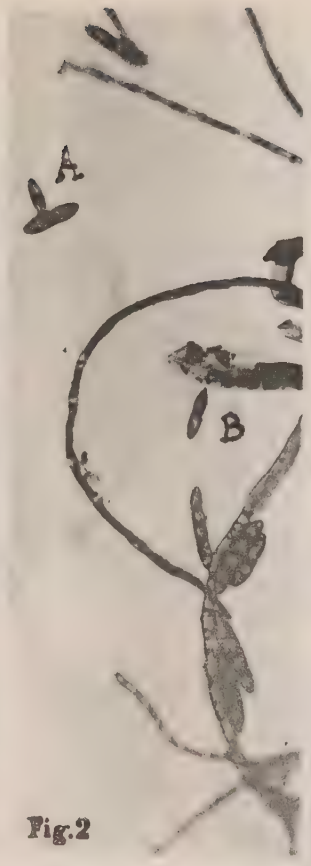
Fig.1



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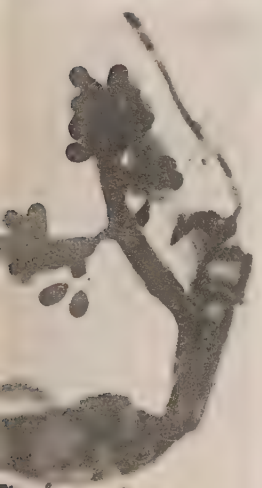

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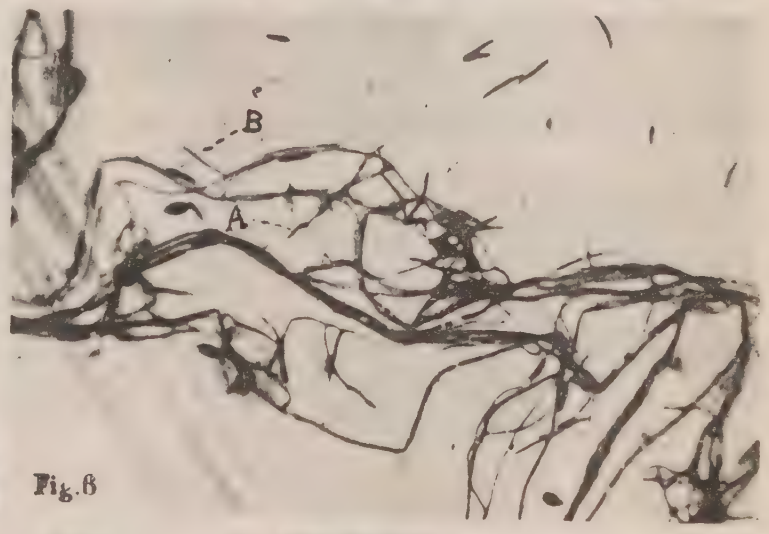

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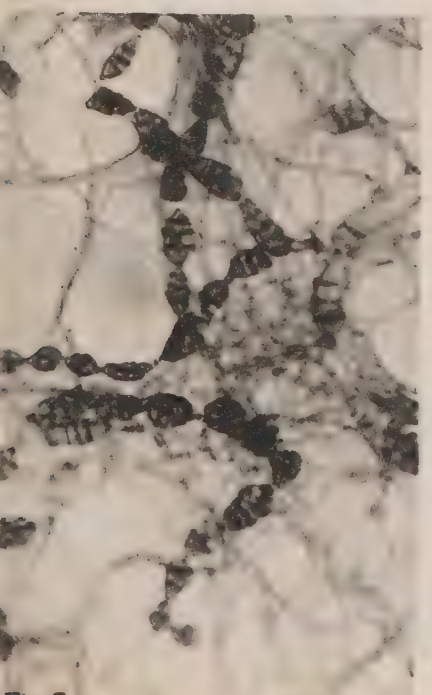

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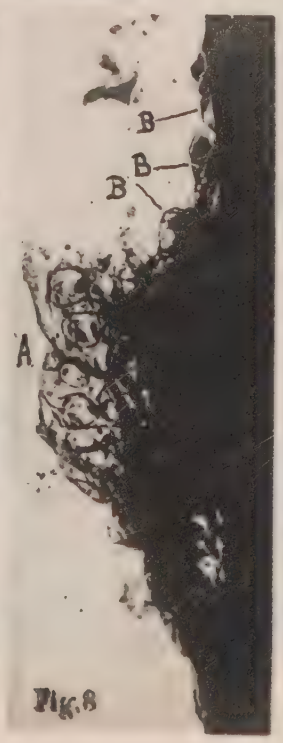


Fig.8

Fig.9

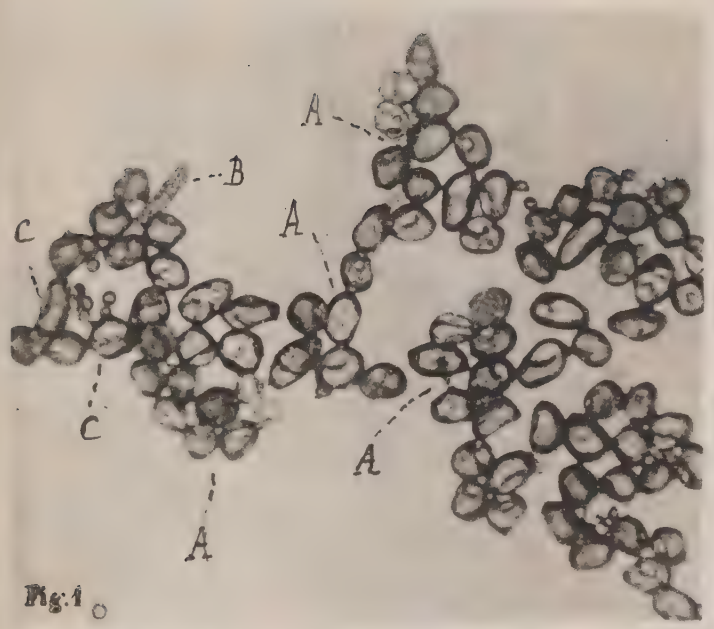
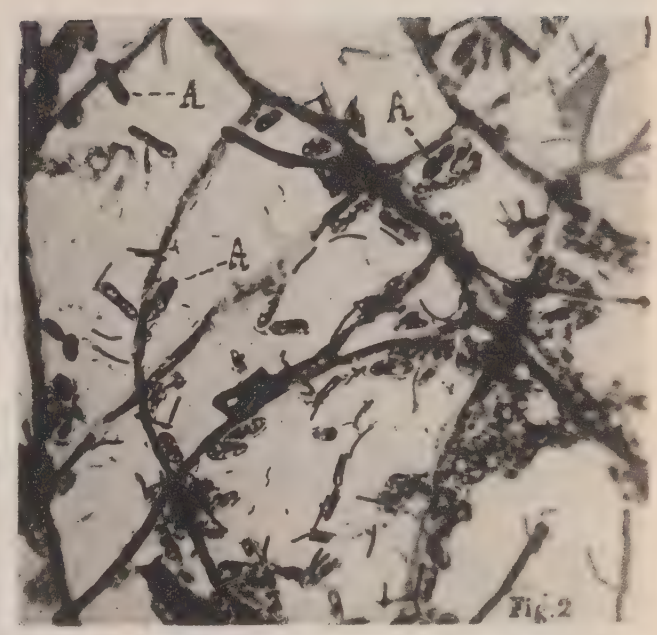


Fig.1



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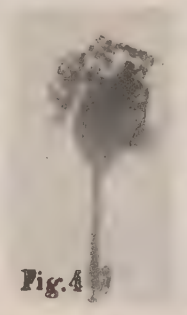
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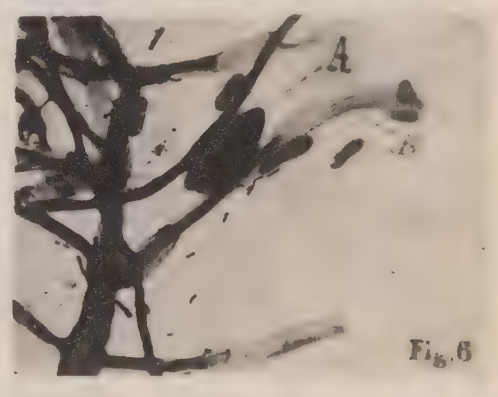

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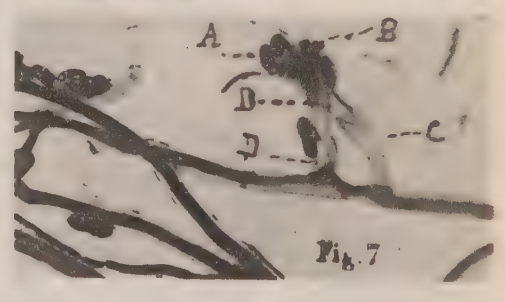

Fig.7

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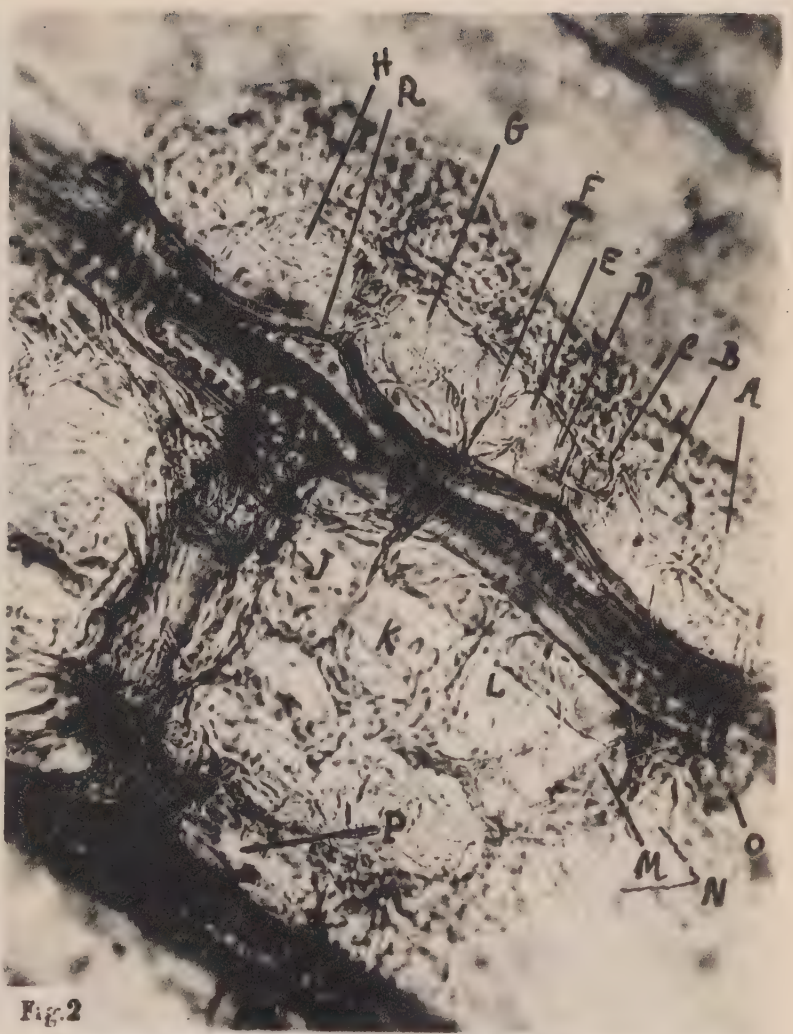

Fig.2

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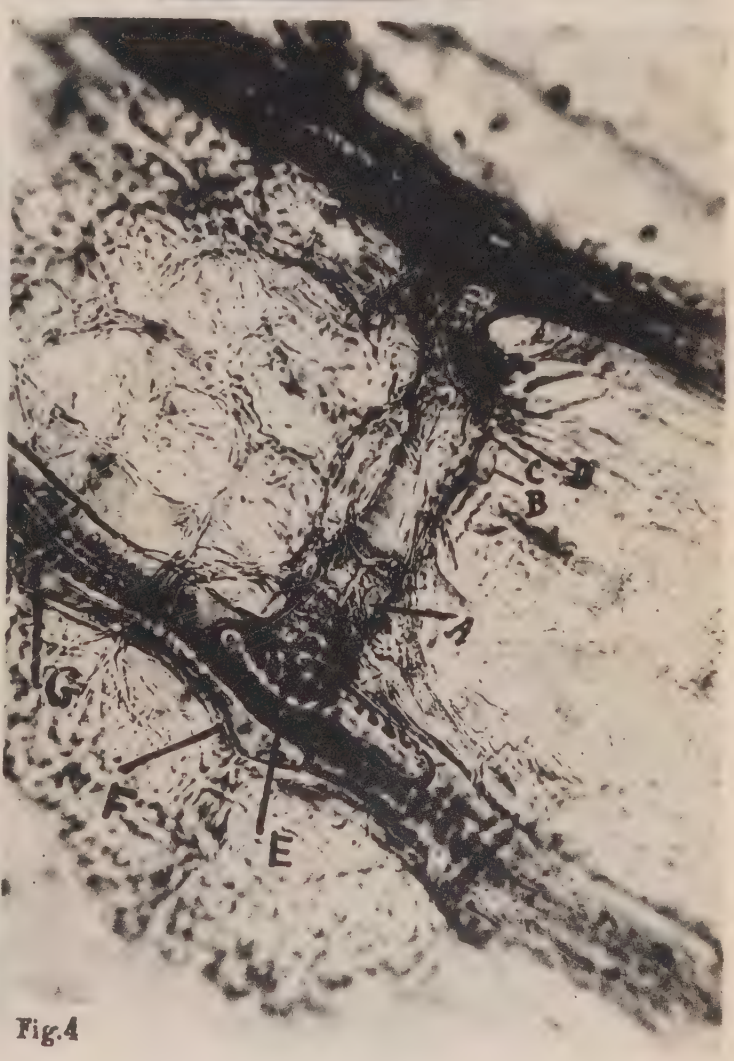

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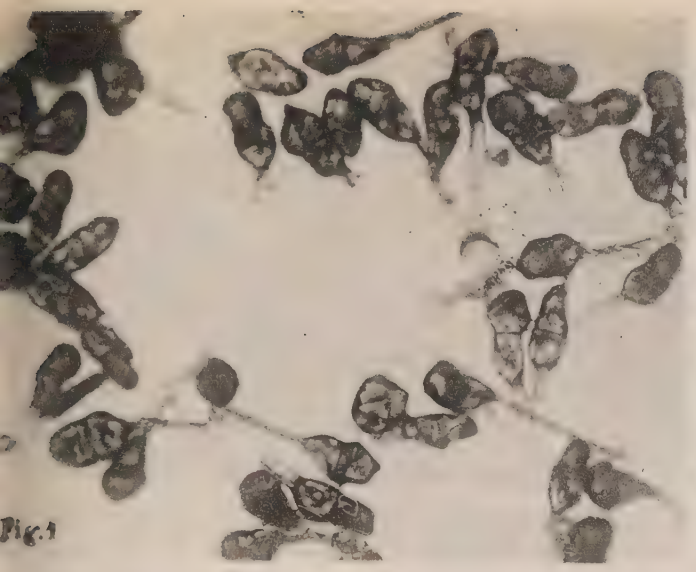
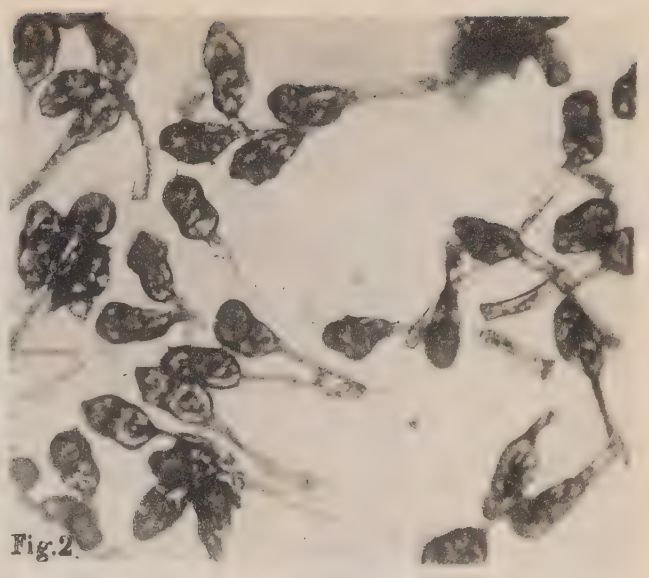


Fig.1



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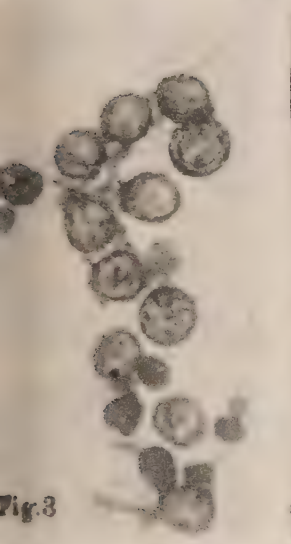

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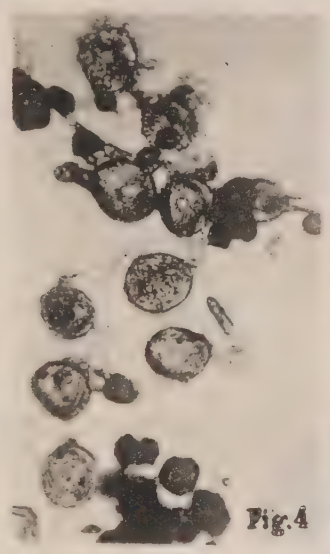

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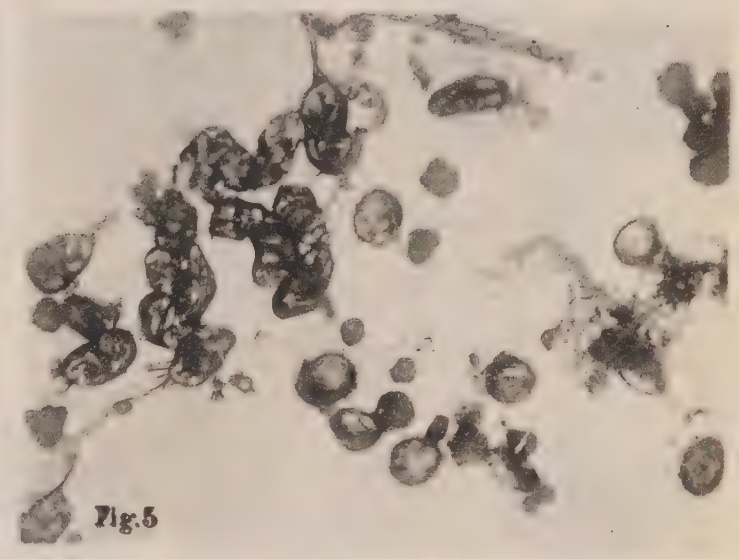

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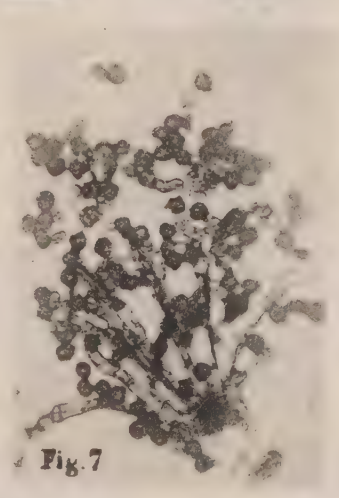

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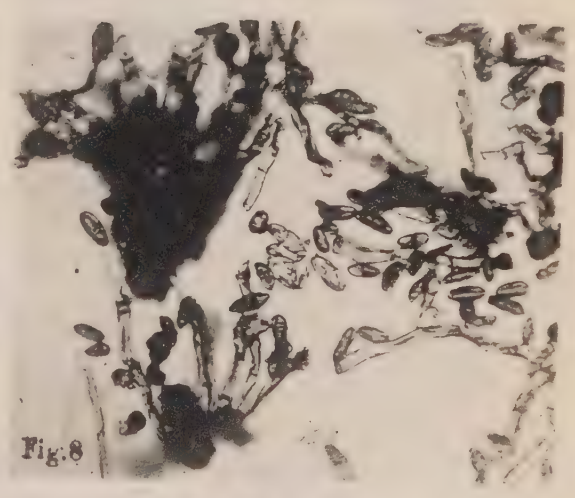

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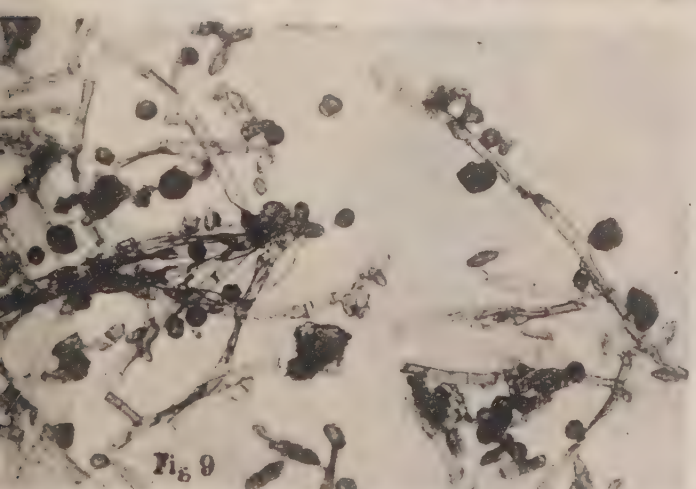


Fig 9

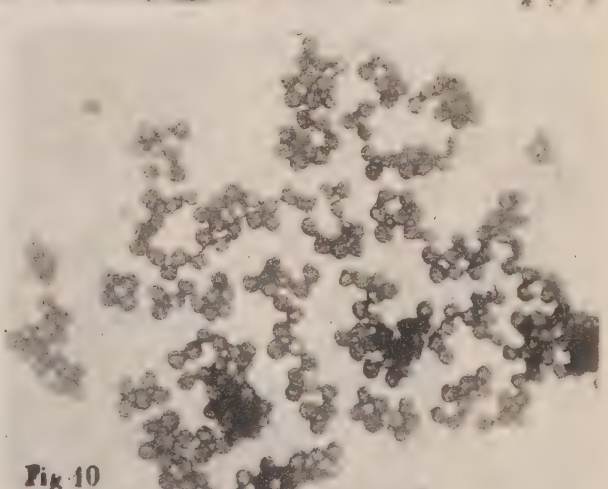
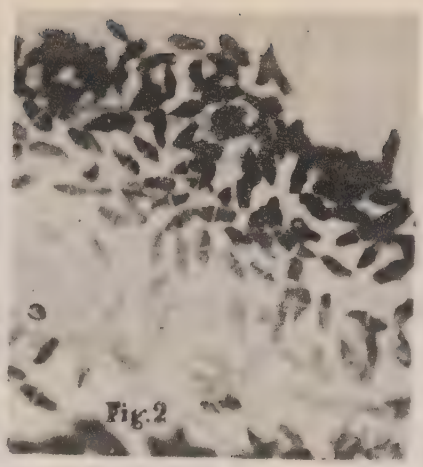


Fig 10

Fig.1



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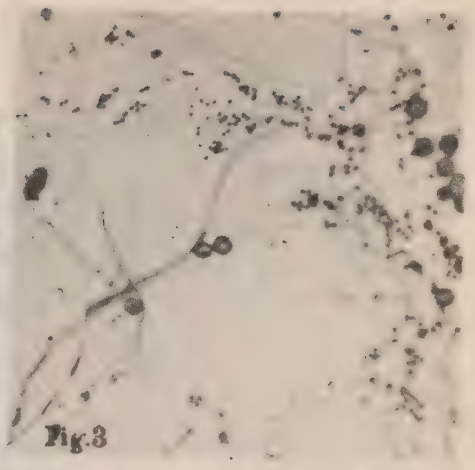

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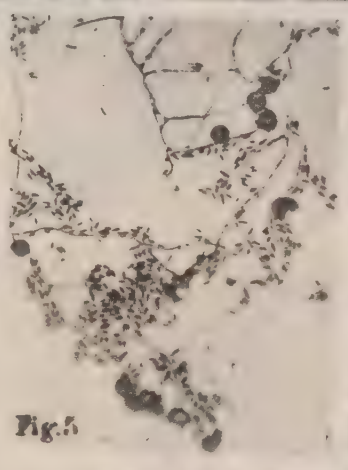

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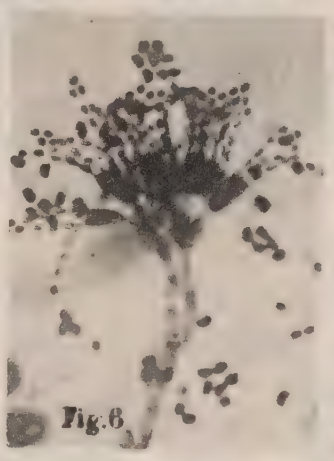

Fig.6

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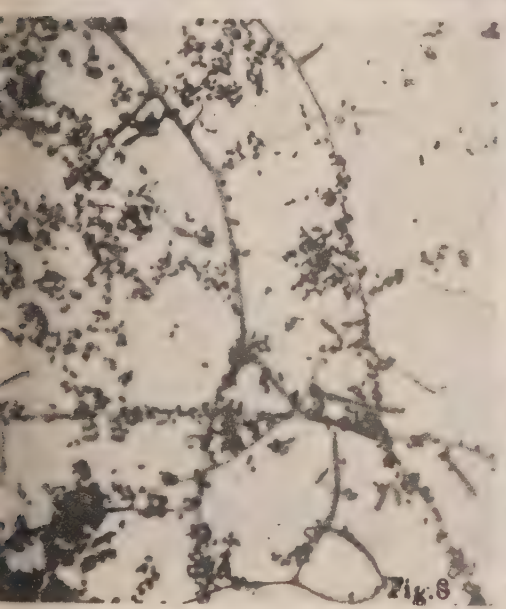

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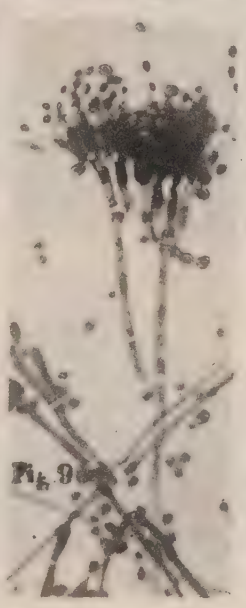

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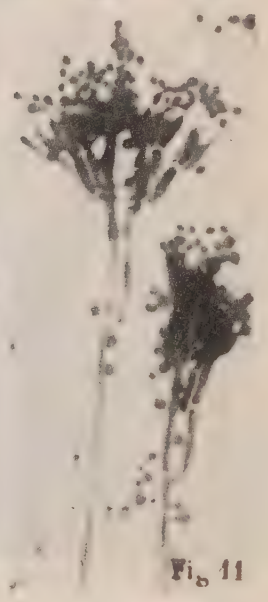
Fig.10



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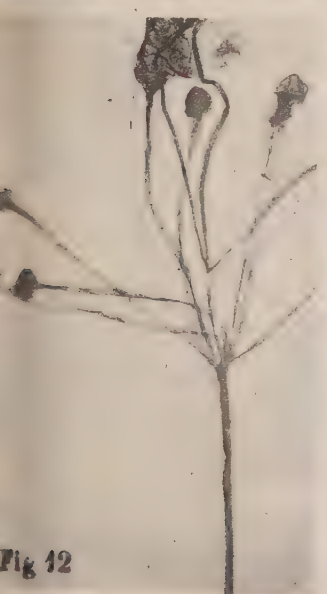

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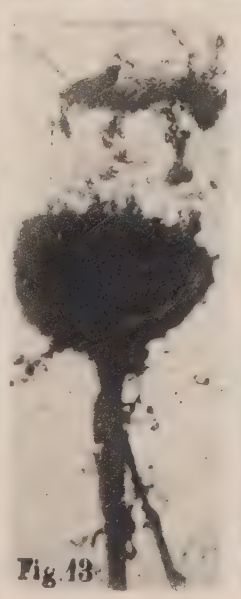

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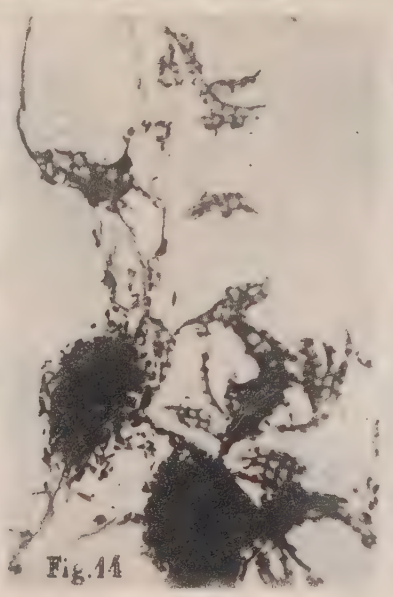

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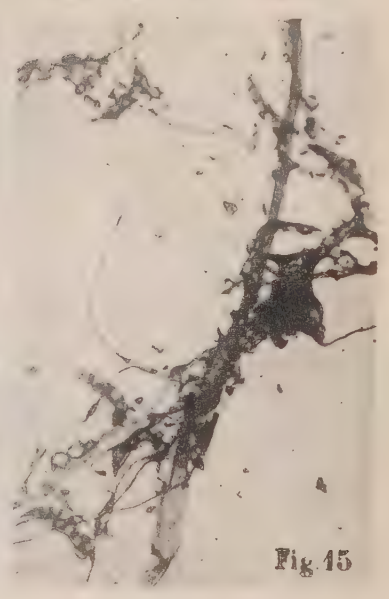

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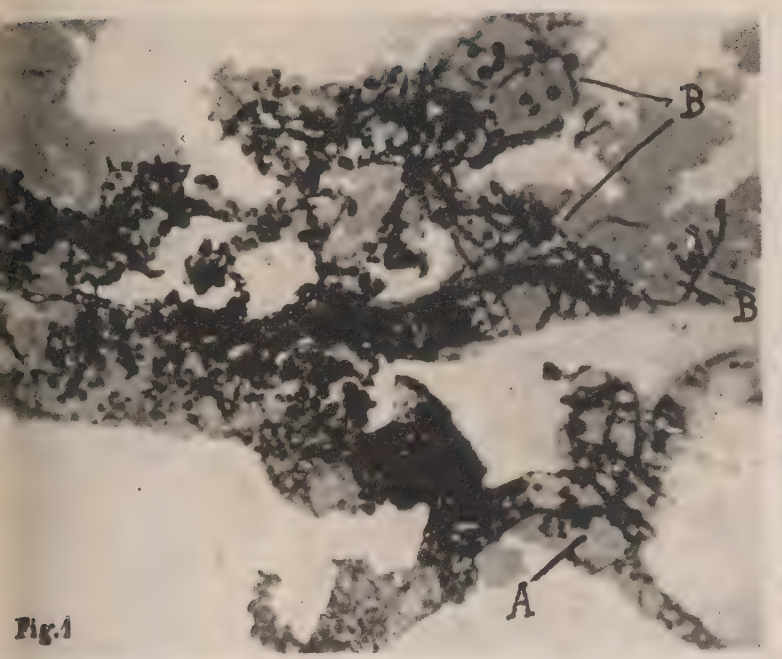

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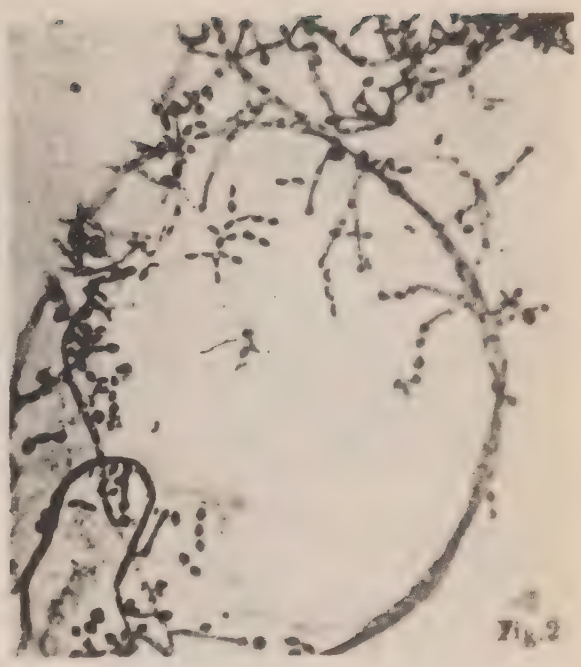
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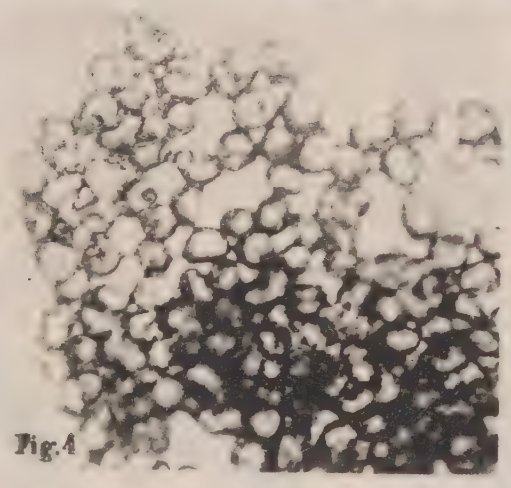
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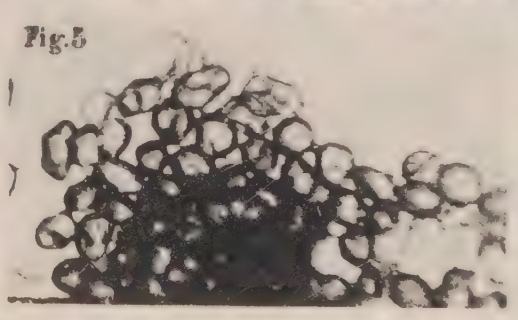
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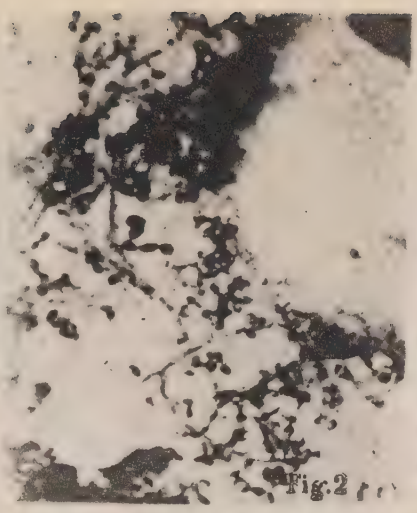
Fig.1



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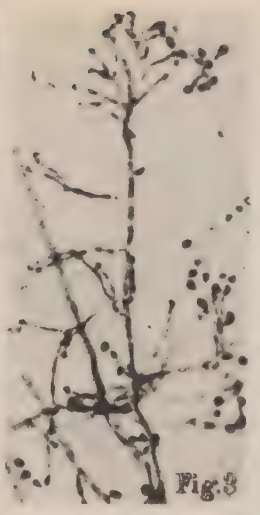

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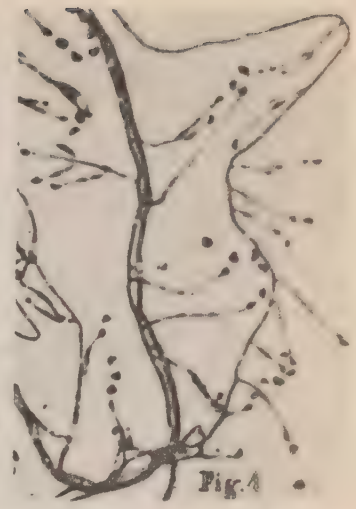

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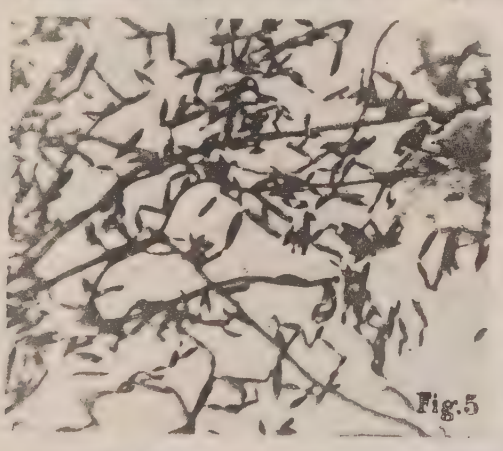

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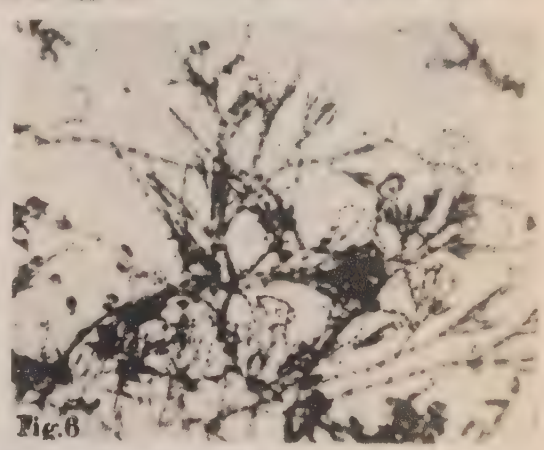

Fig.6

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Fig.8

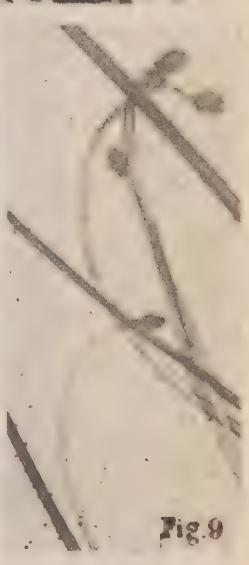
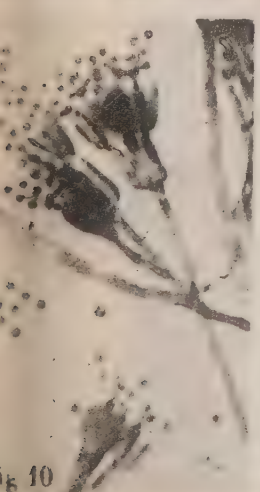


Fig.9



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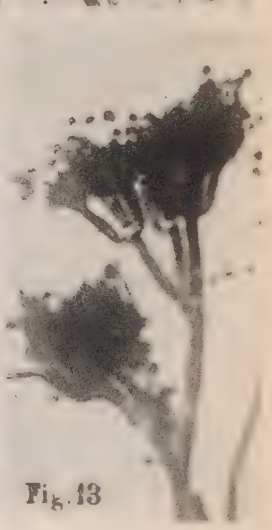

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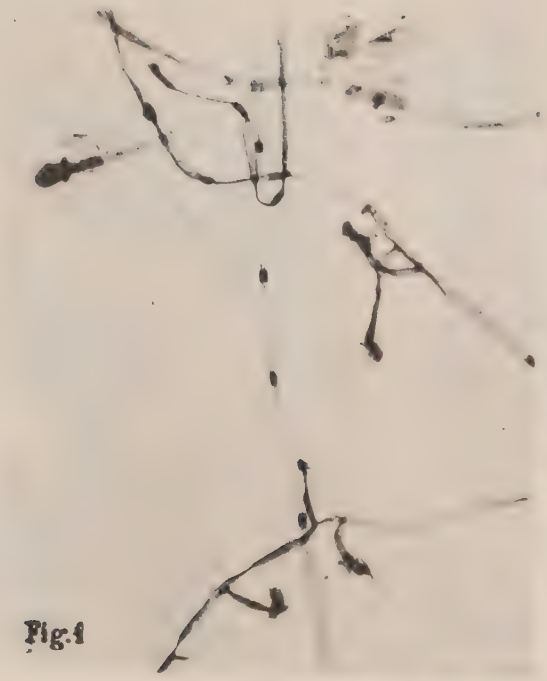

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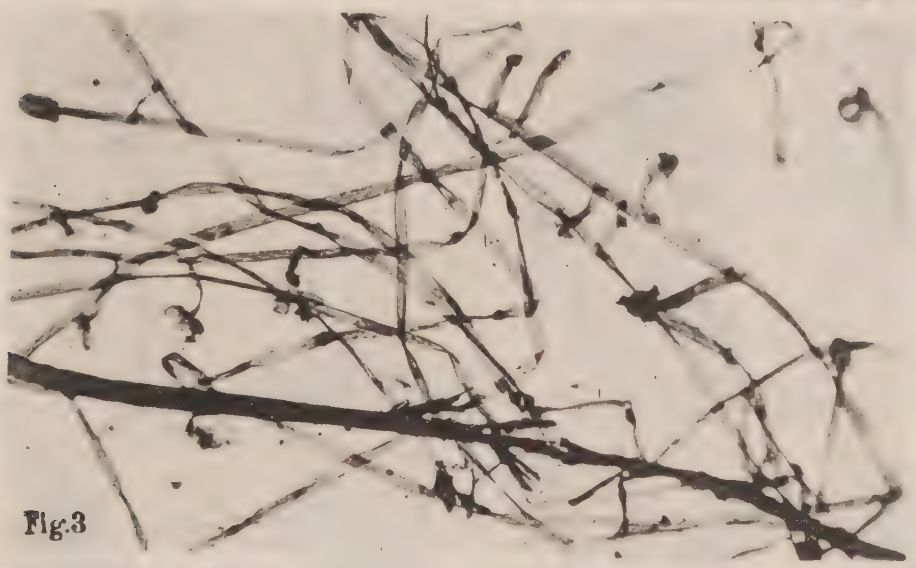

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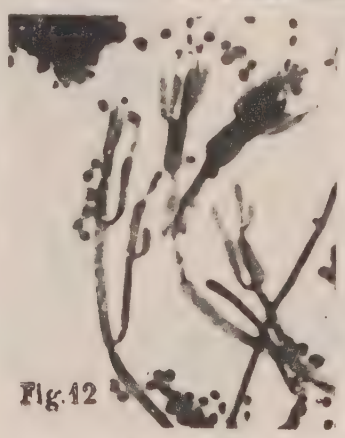

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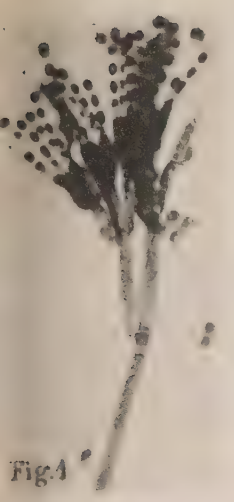
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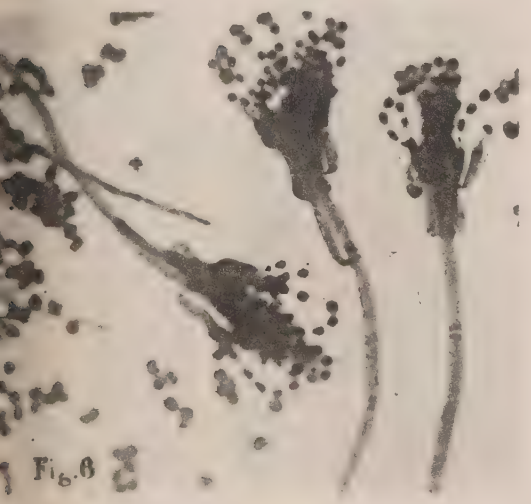
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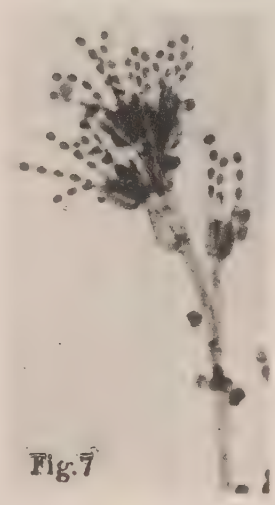
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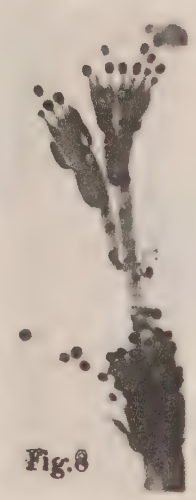
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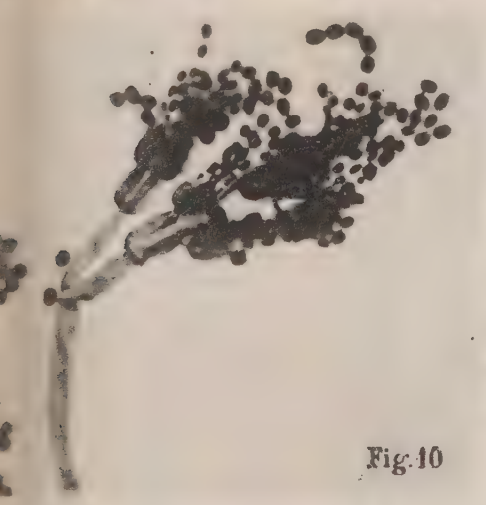
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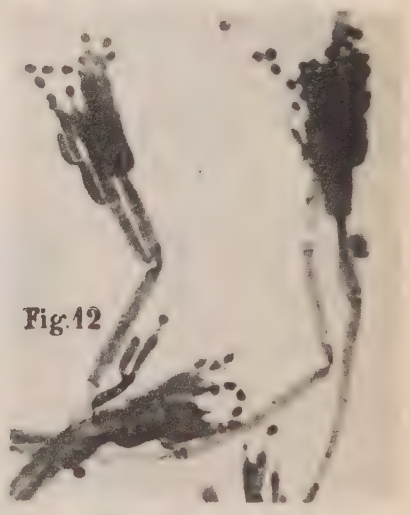
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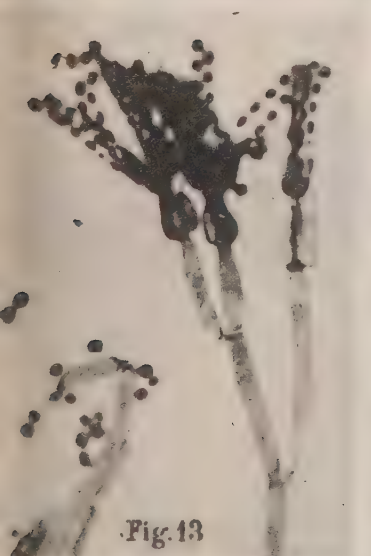
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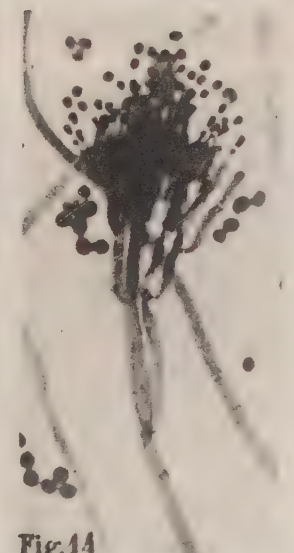
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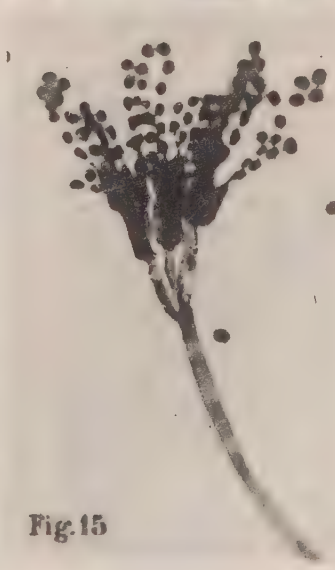
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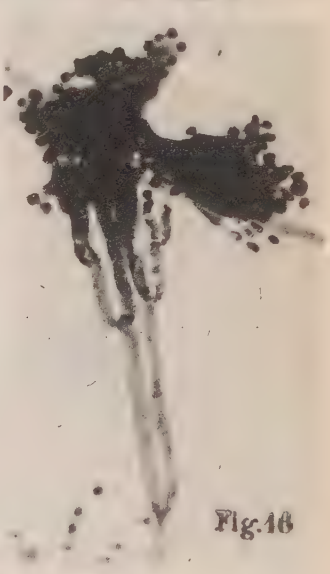
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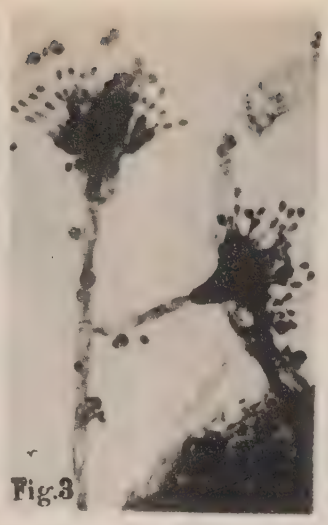

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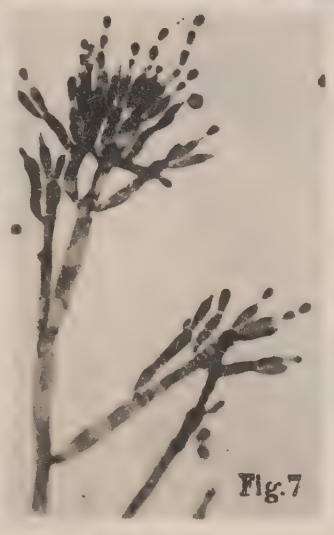

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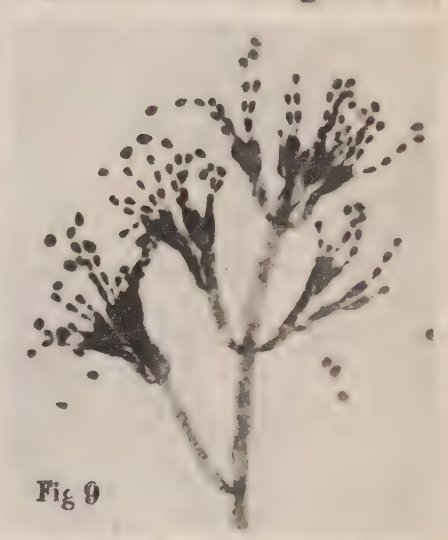

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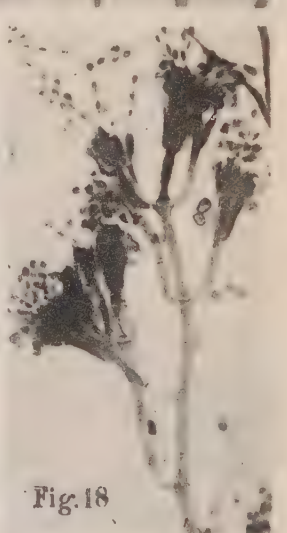

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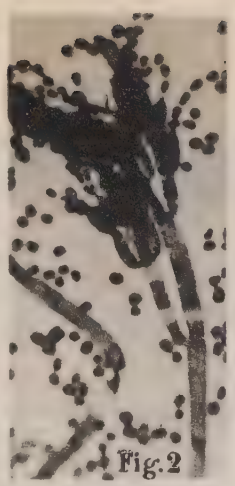
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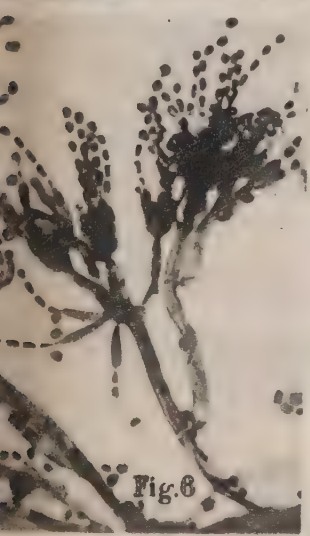
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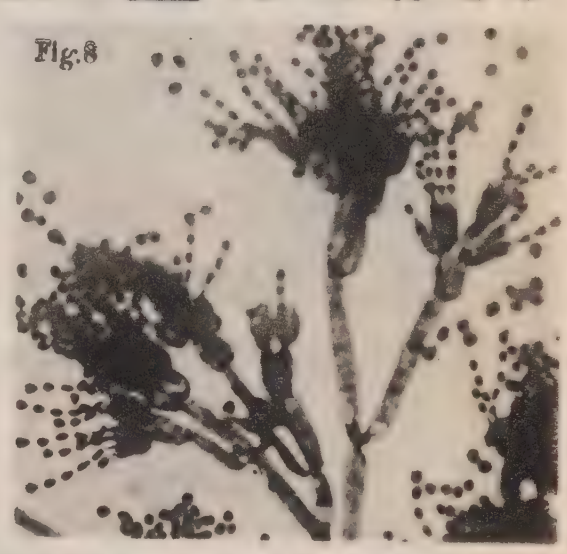
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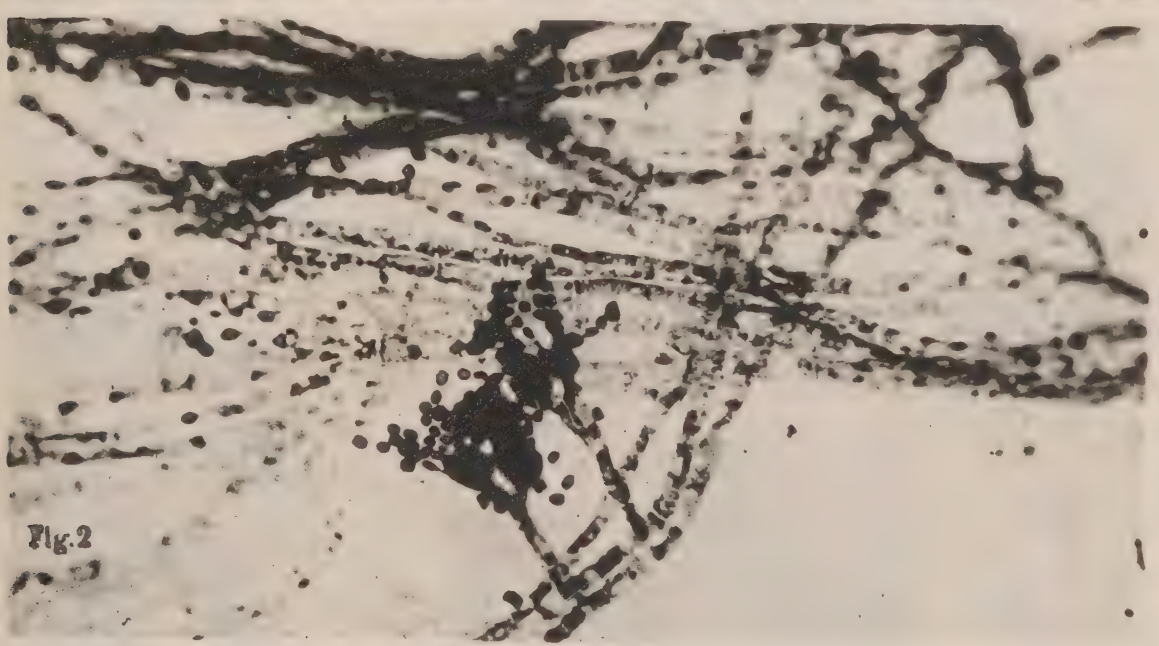

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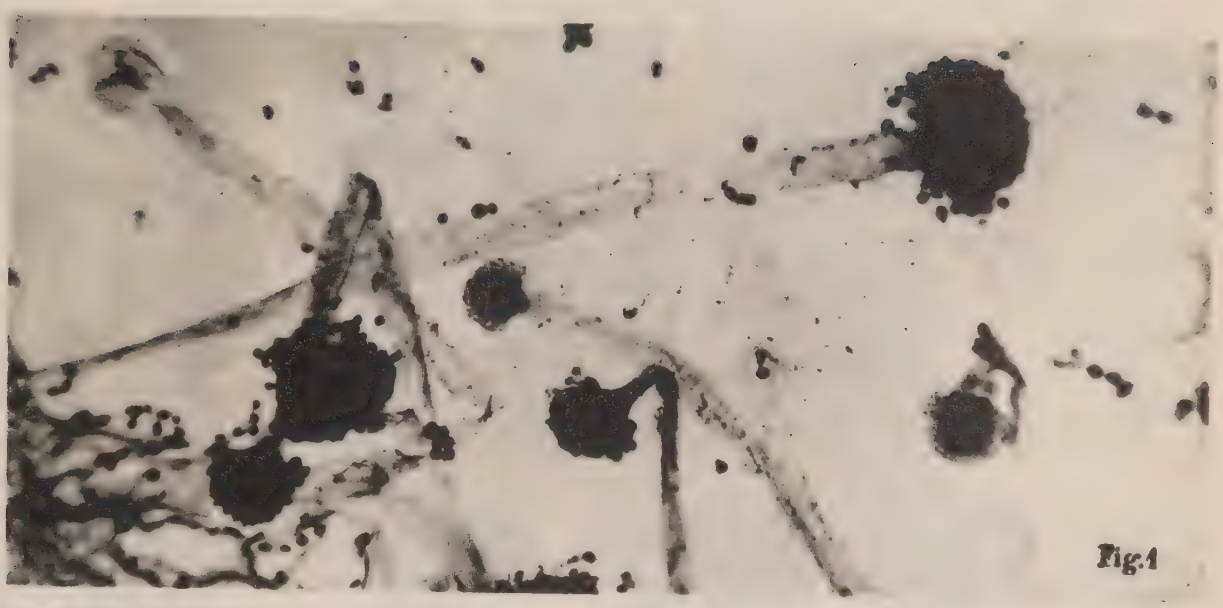

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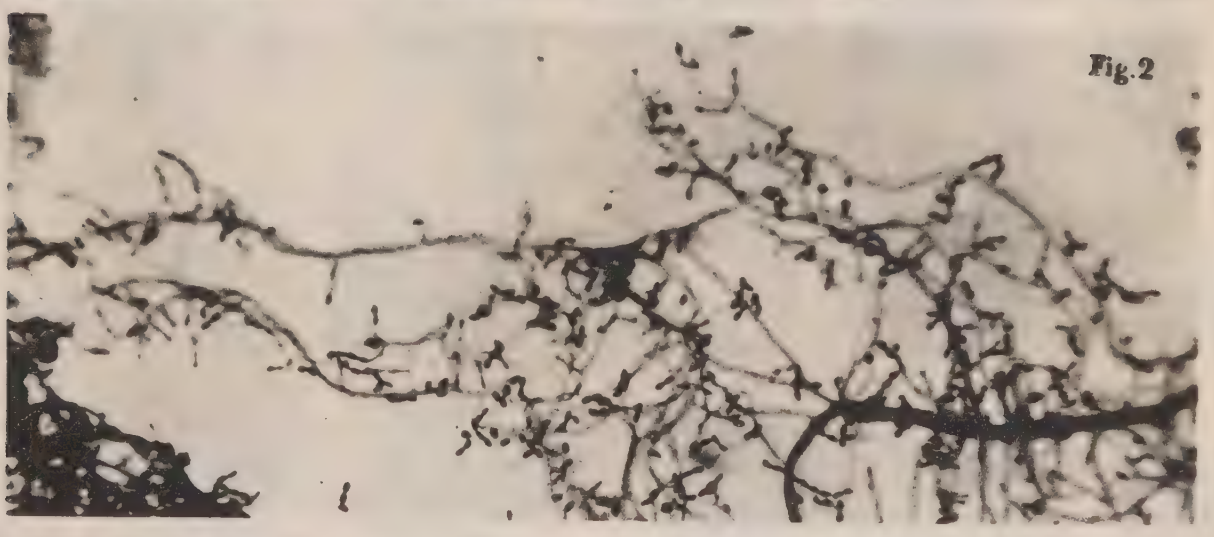

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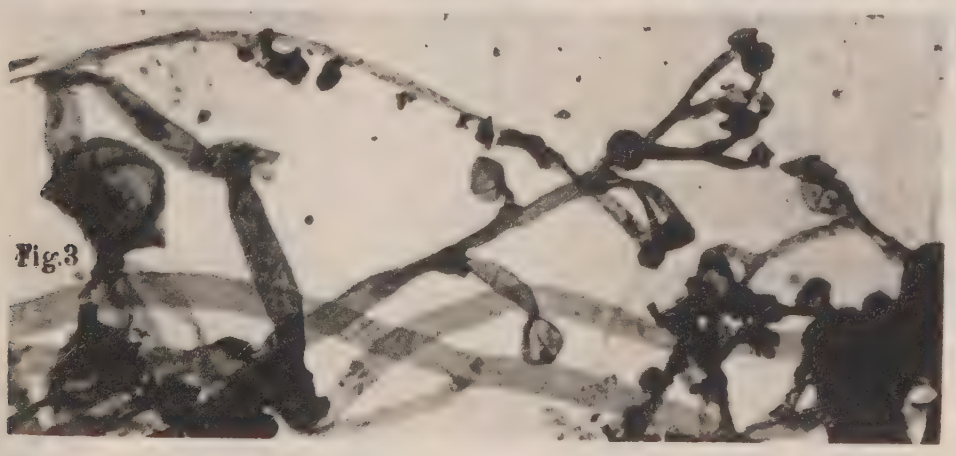

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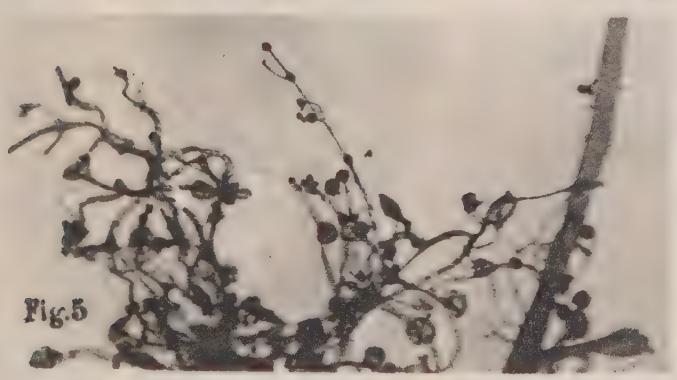

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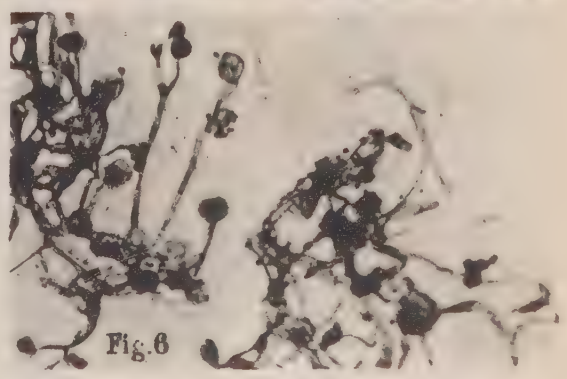

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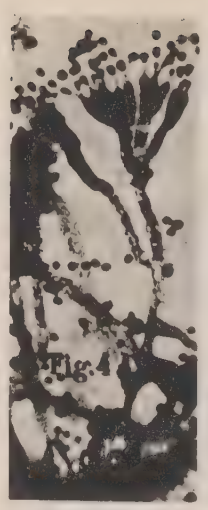
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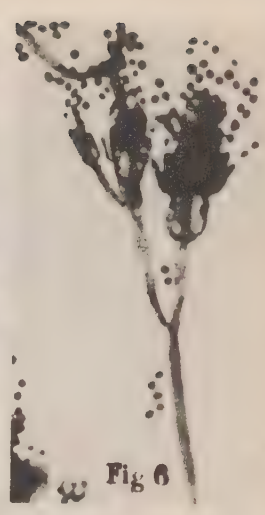
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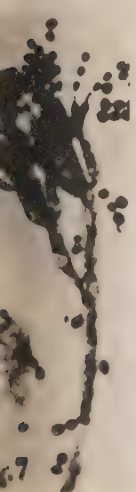

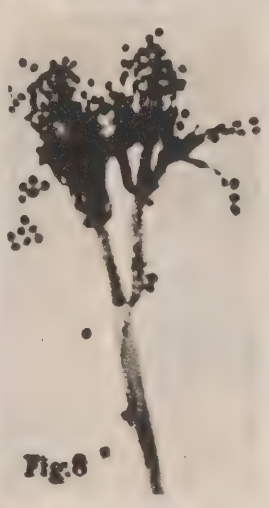
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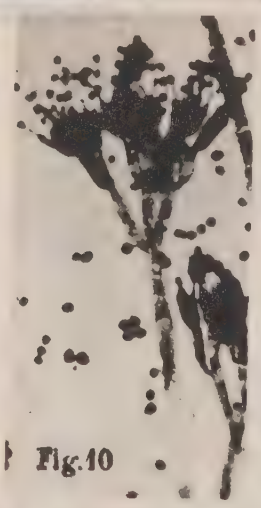
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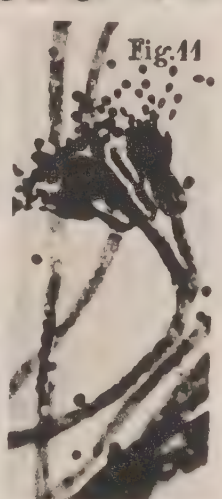
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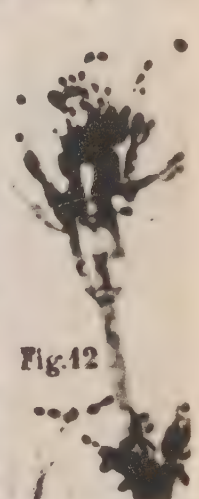
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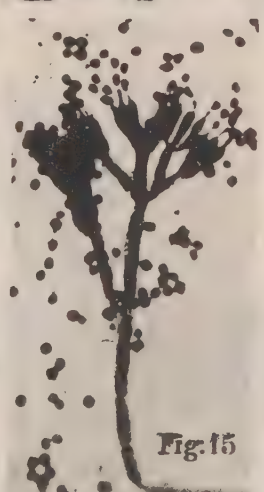
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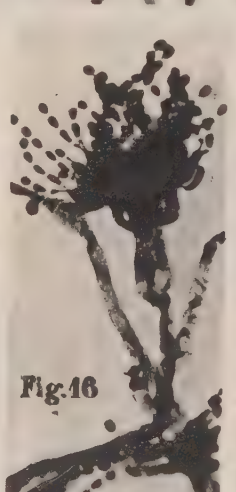
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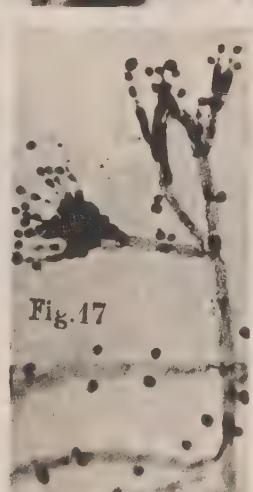
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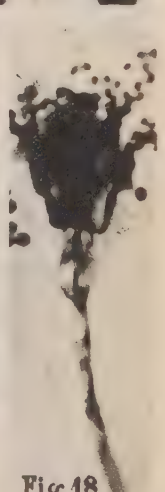
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Fig.20

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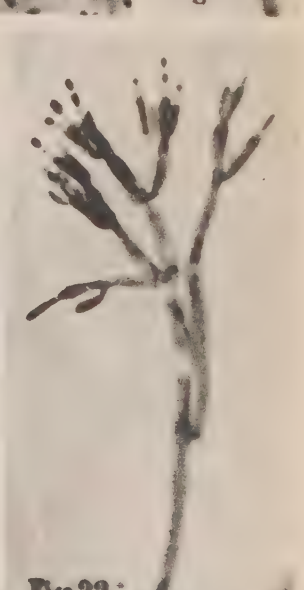
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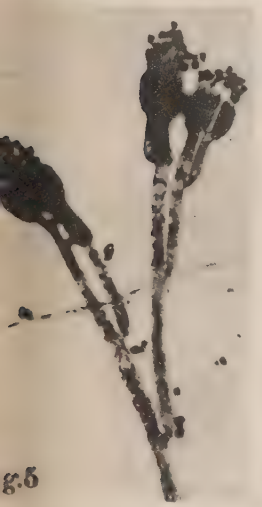

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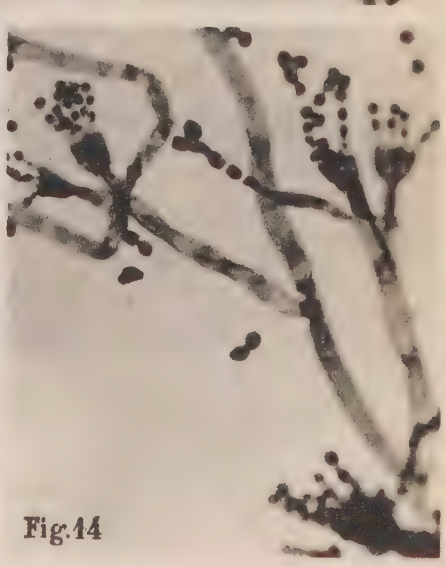

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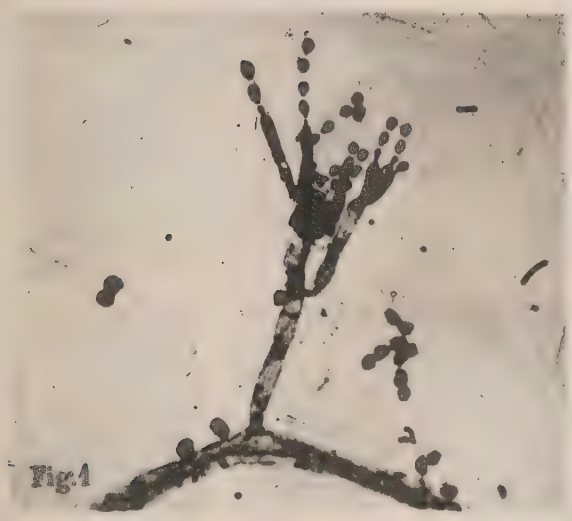

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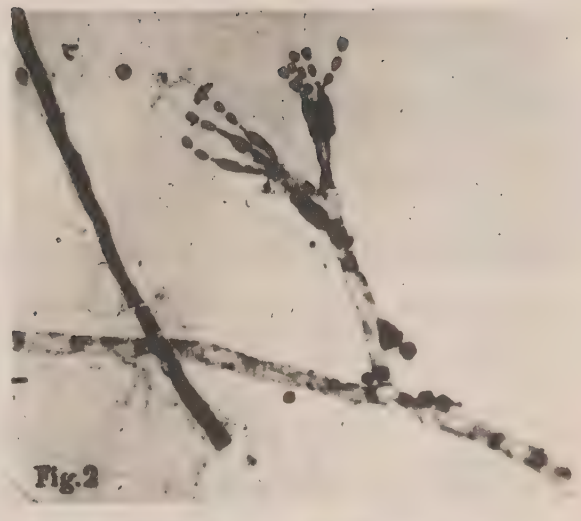

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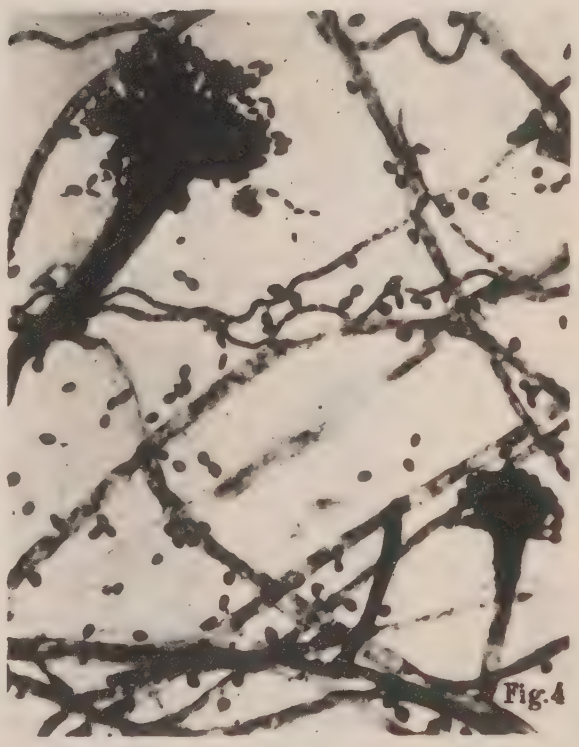

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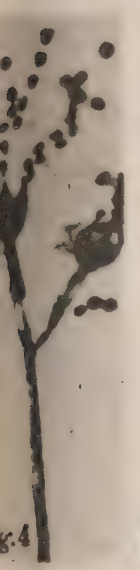
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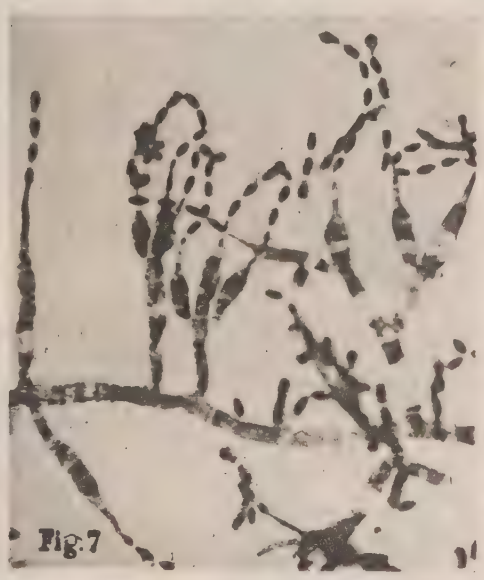
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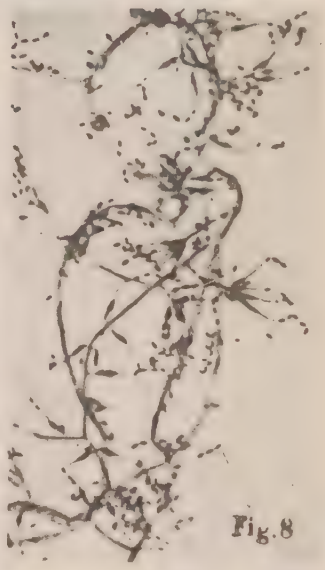
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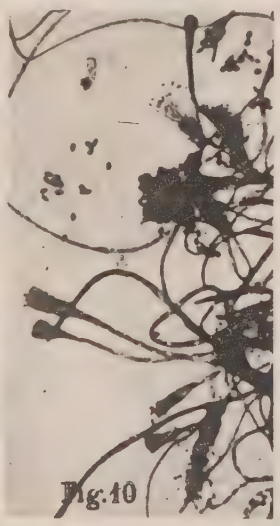
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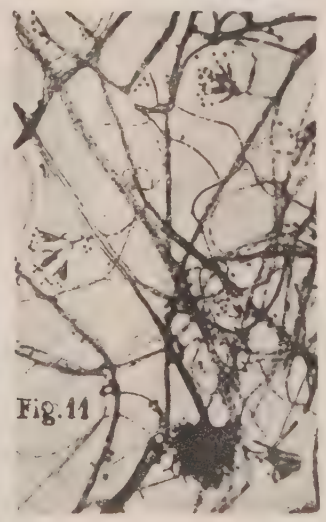
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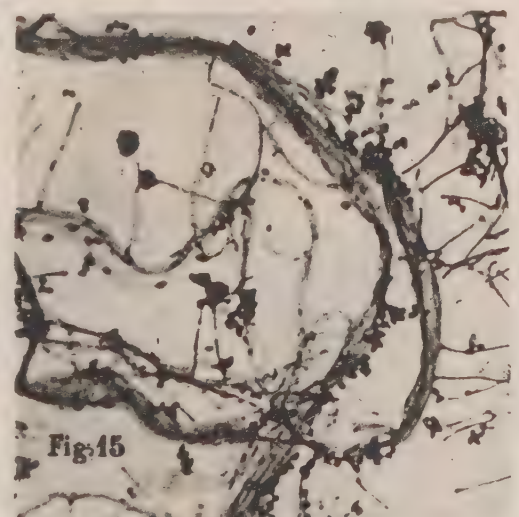
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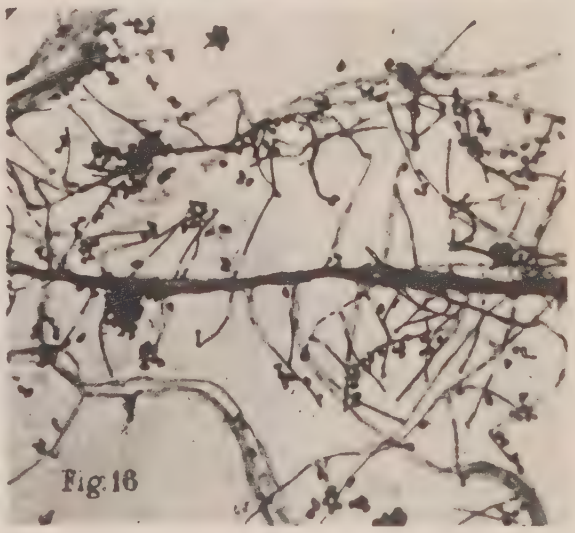
Fig.16

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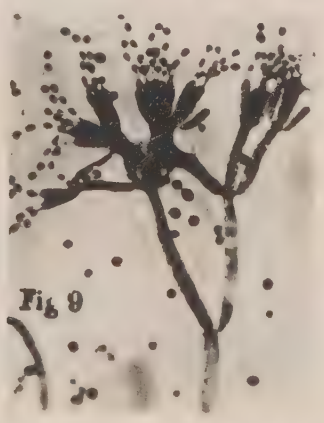
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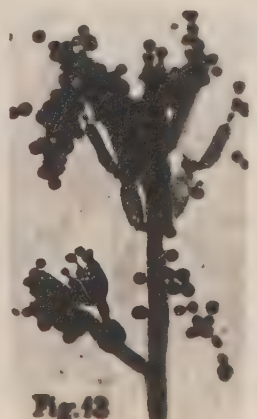
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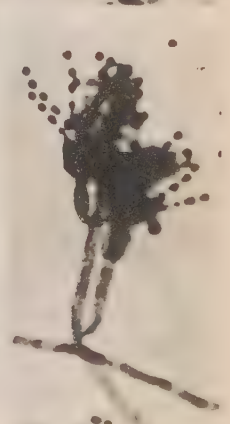
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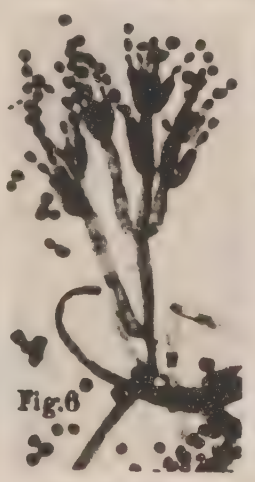
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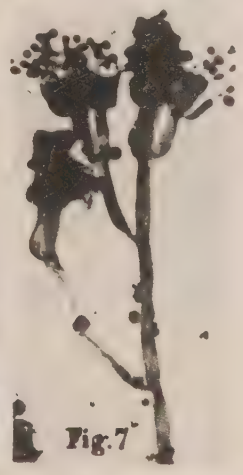
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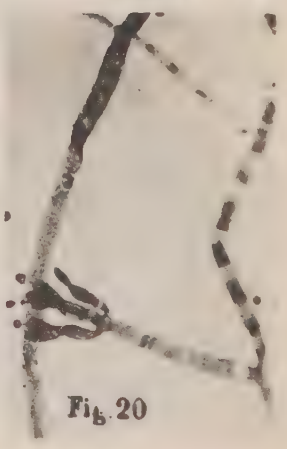
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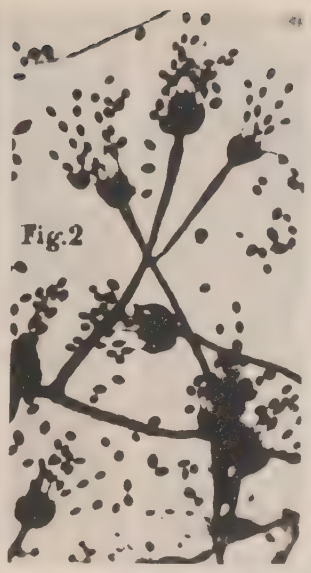
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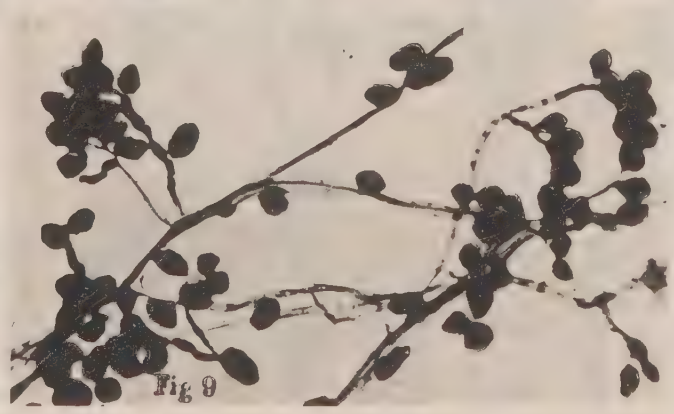
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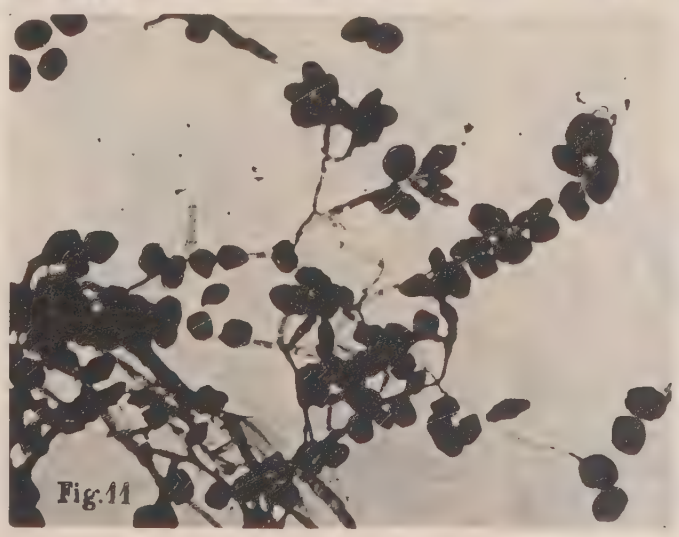
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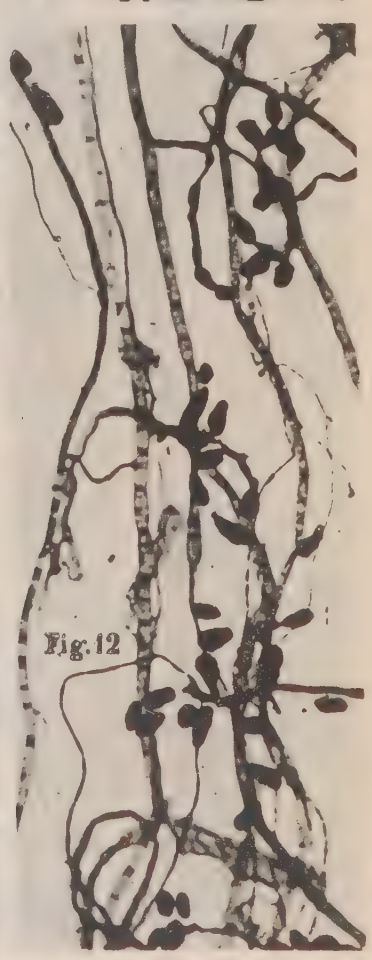
Fig.12

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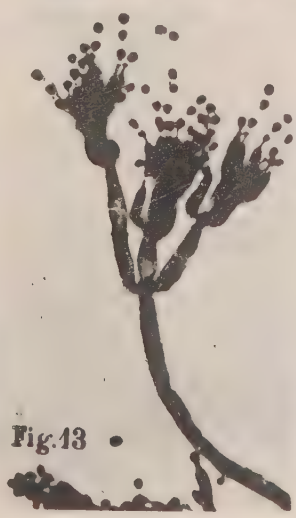
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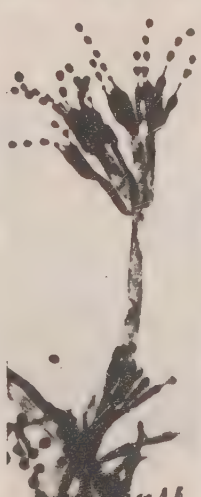
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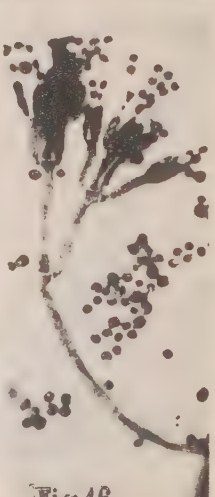
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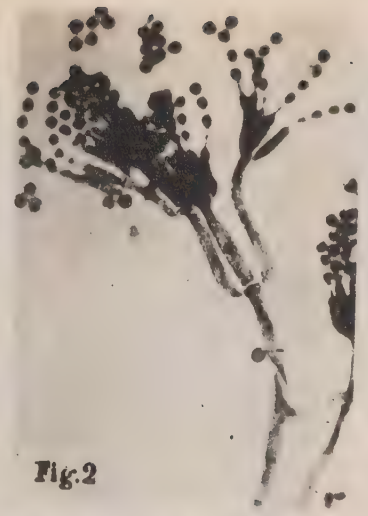
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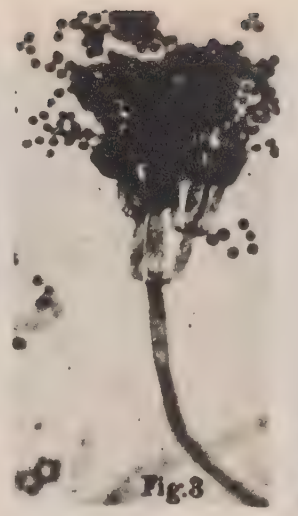
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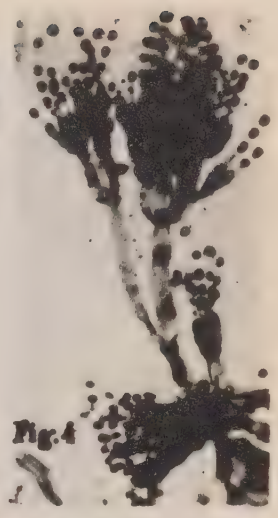
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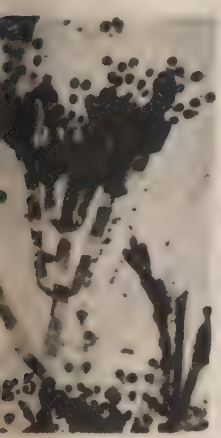

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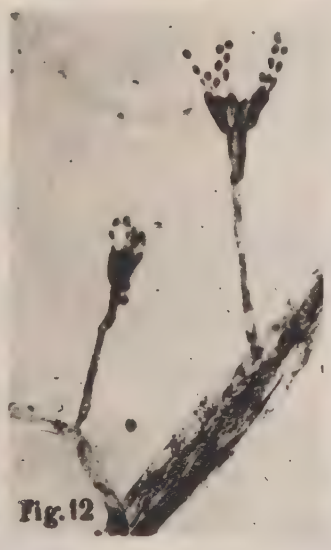
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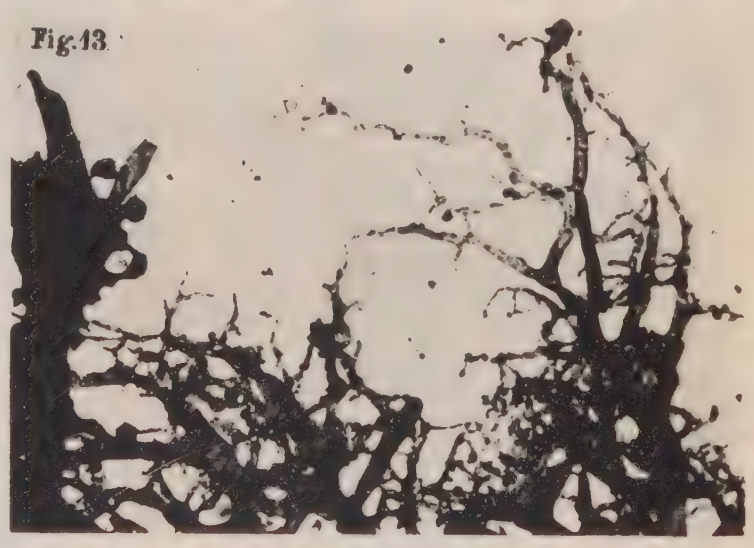
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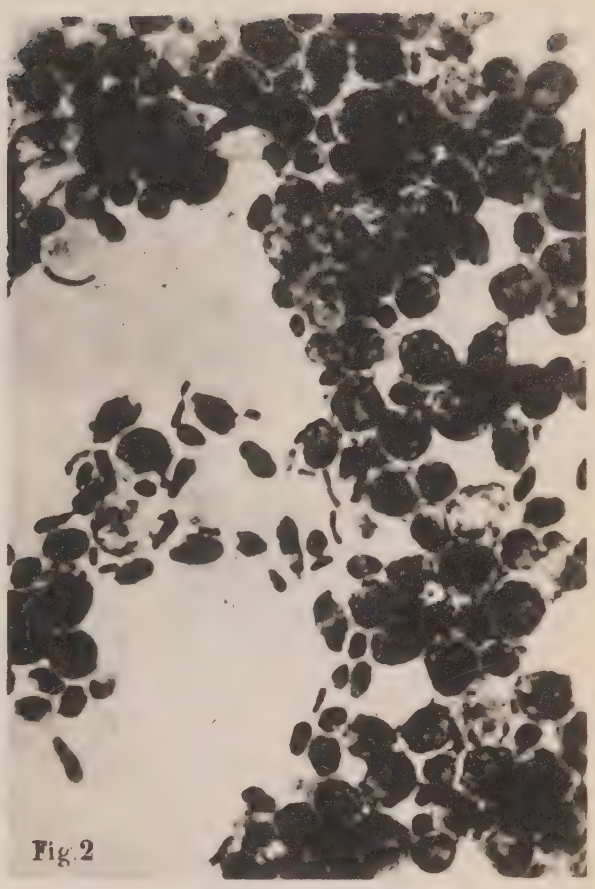
Fig.15

Fig.16

Fig.1



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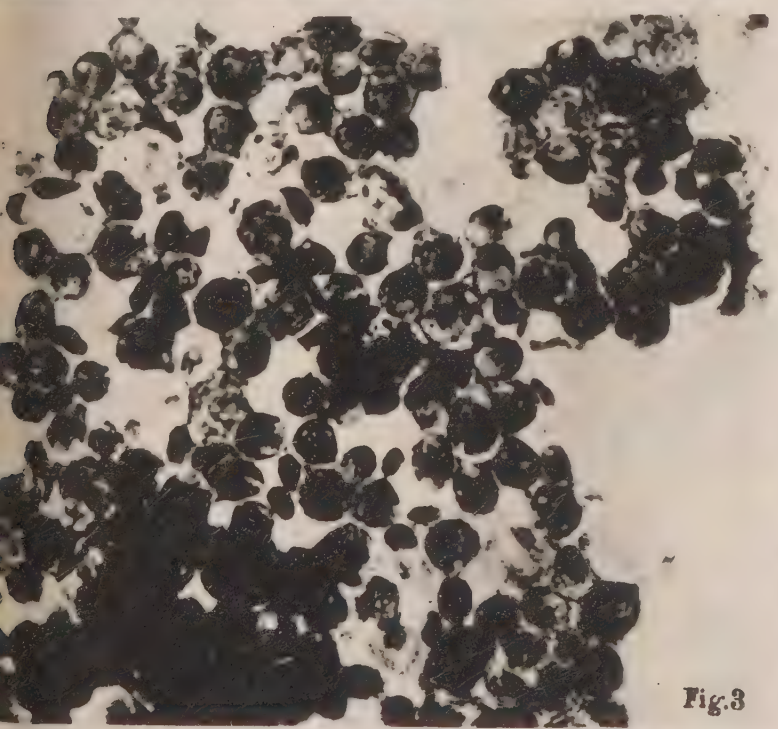

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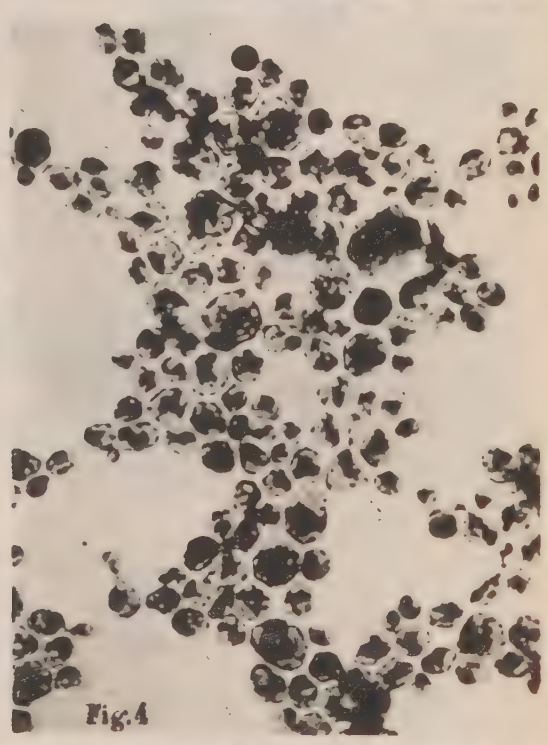

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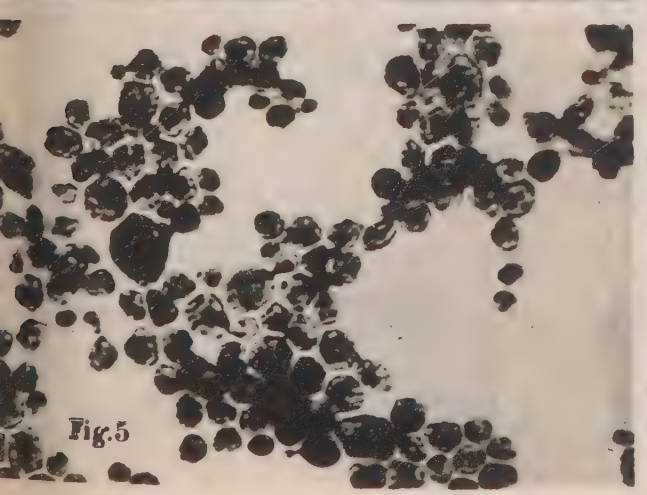

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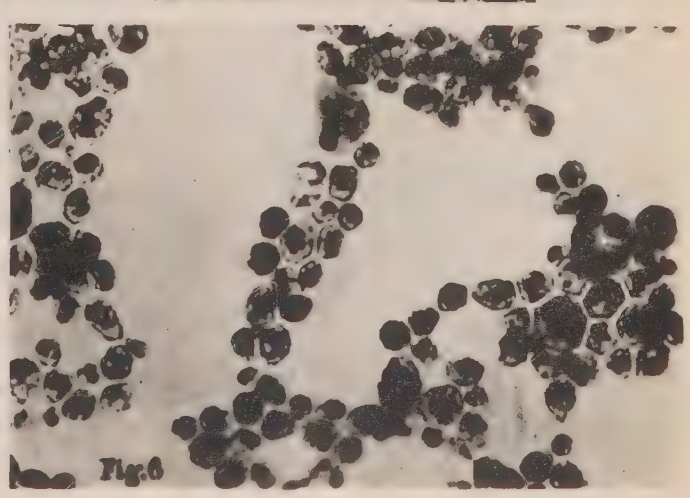

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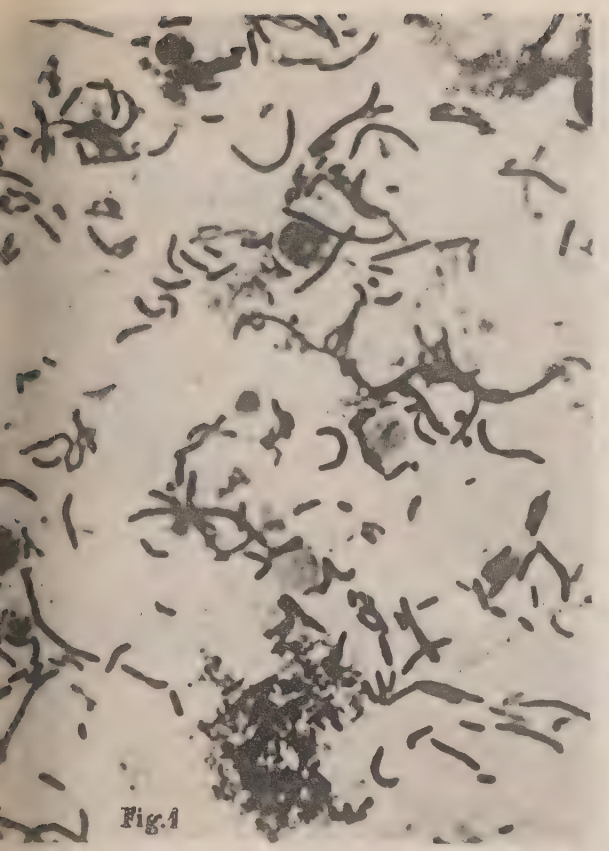

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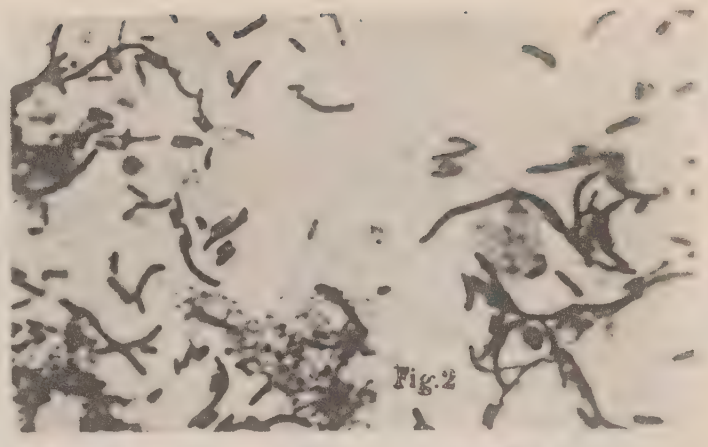

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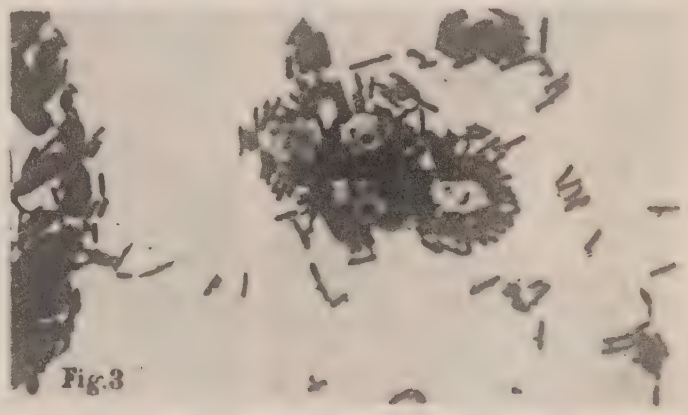

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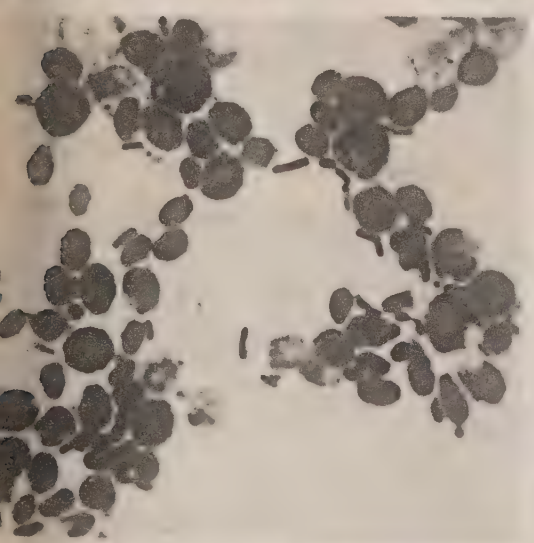

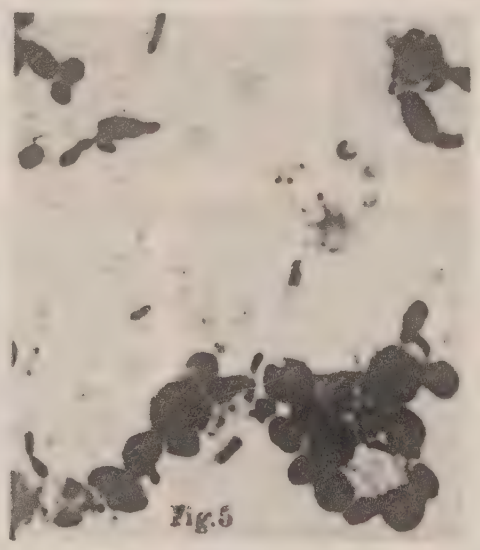

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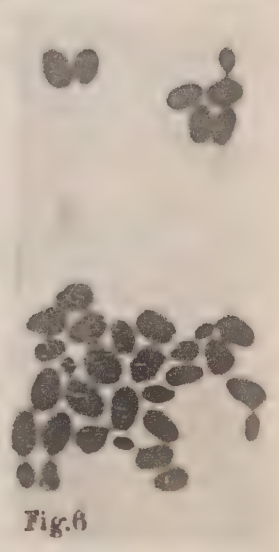

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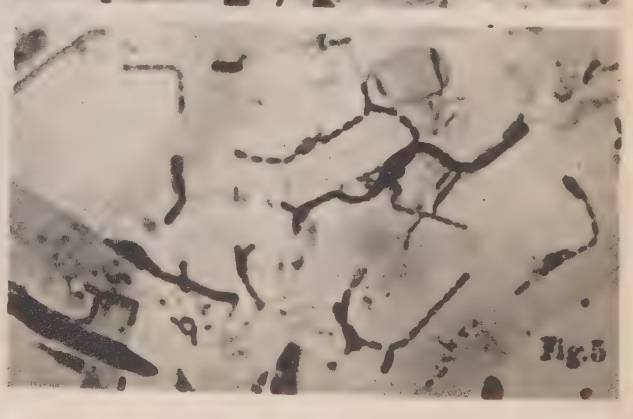

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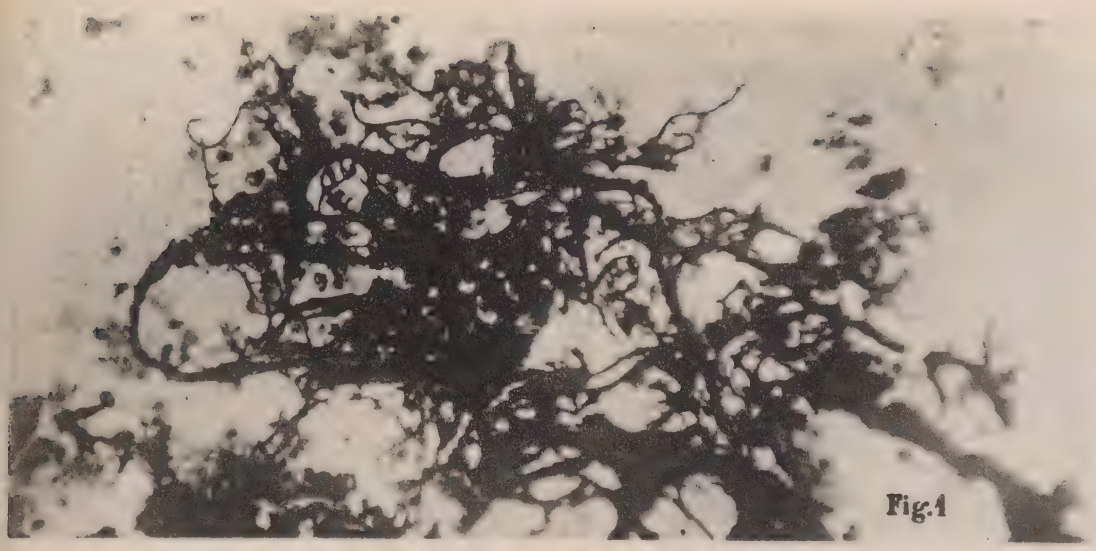

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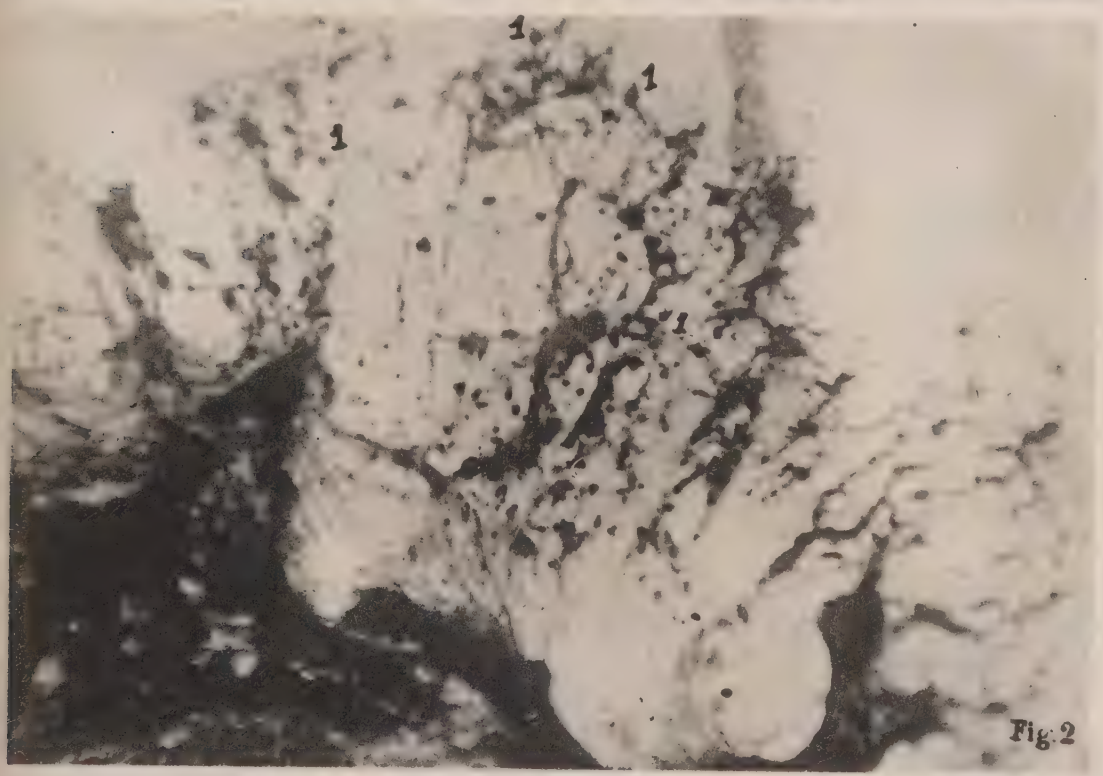

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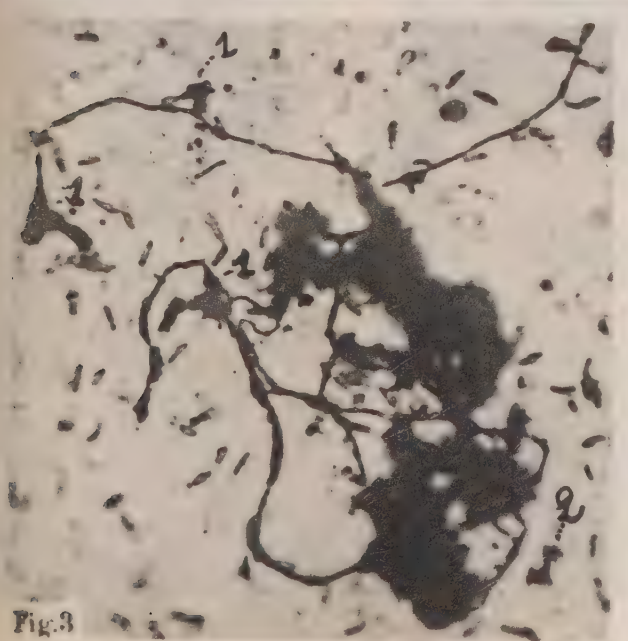

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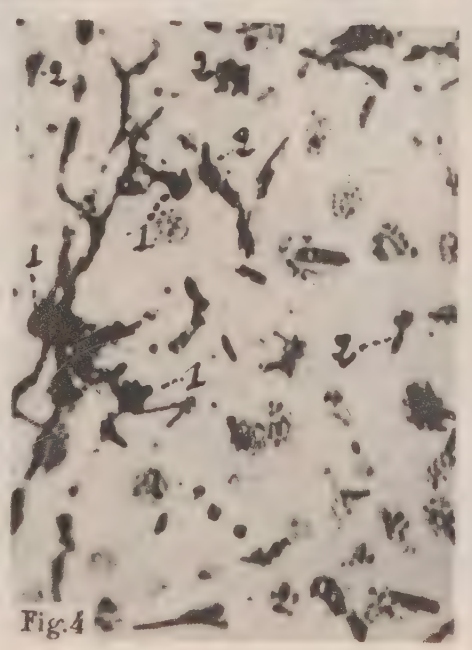

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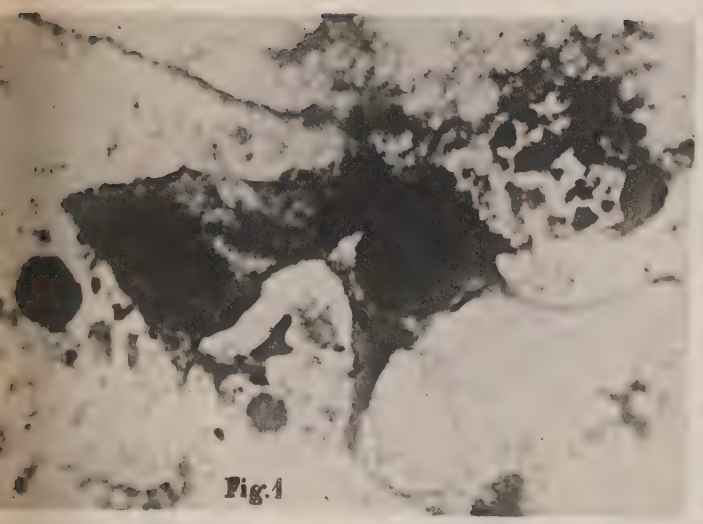

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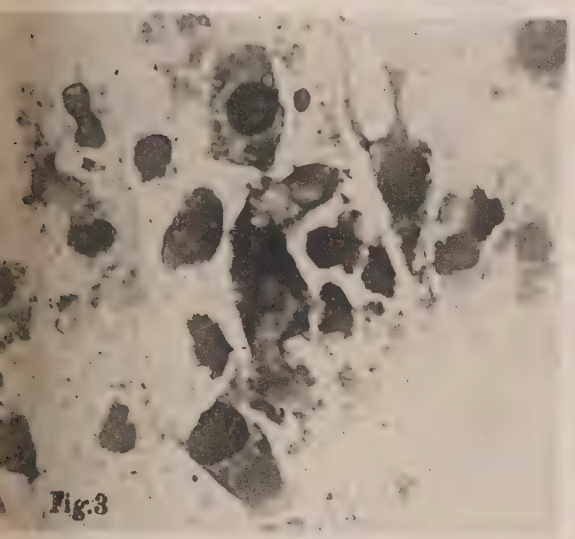

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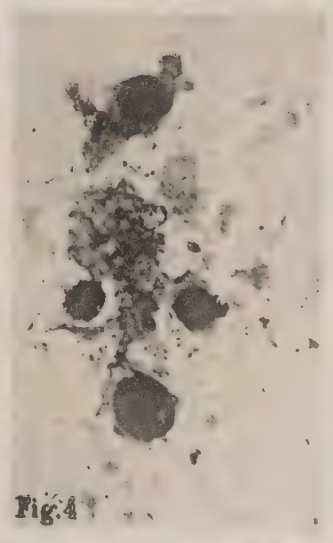

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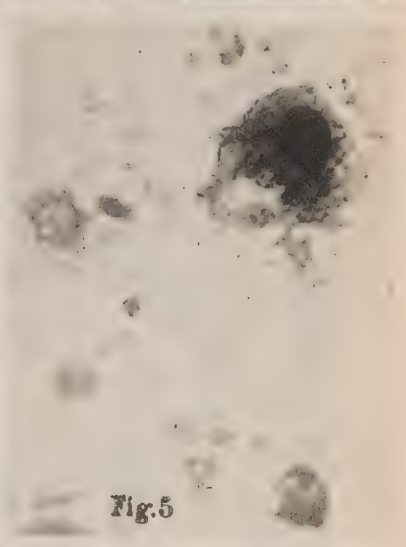
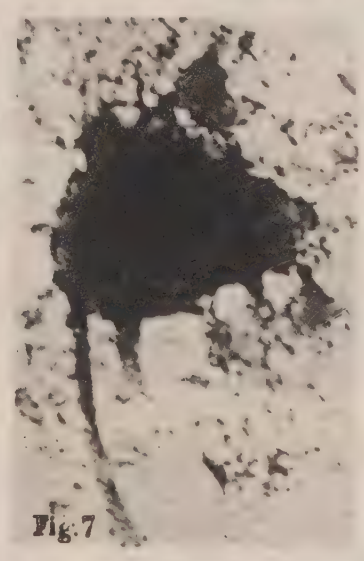


Fig.5

Fig.6



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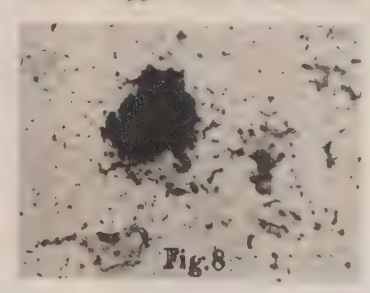

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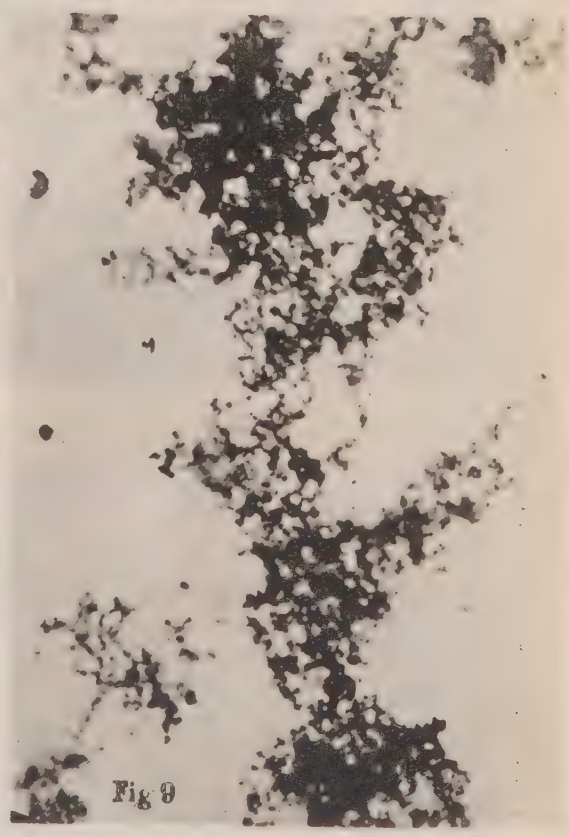

Fig.9

Fig.1

Fig.2

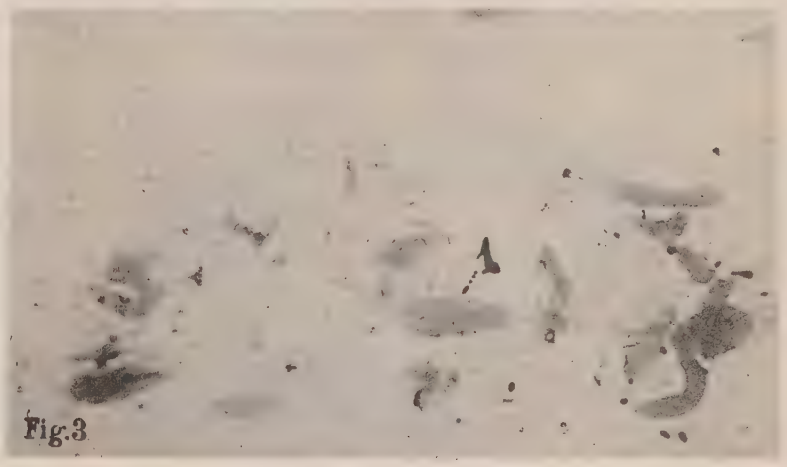

Fig.3

Fig. 1

Fig. 2

Fig. 3

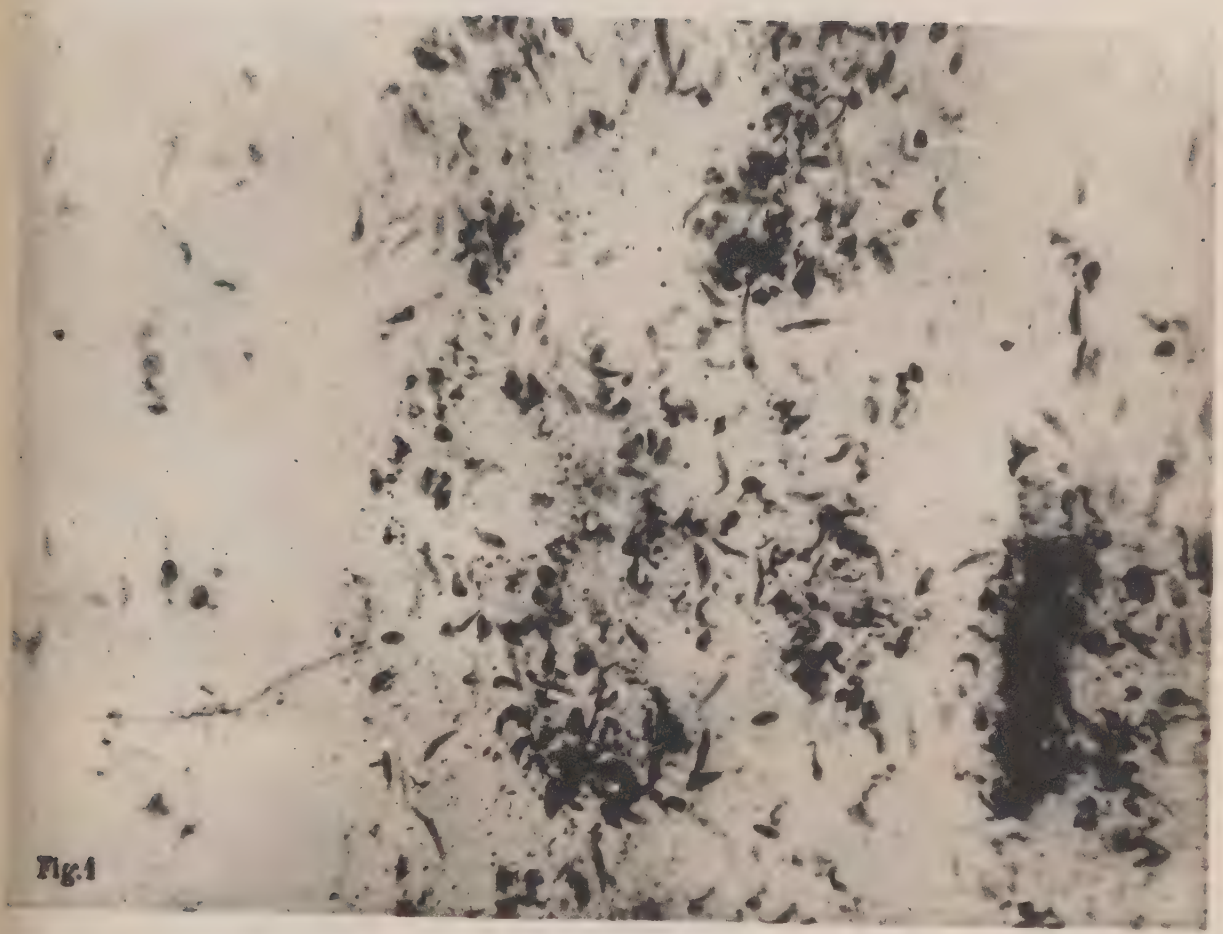

Fig.1

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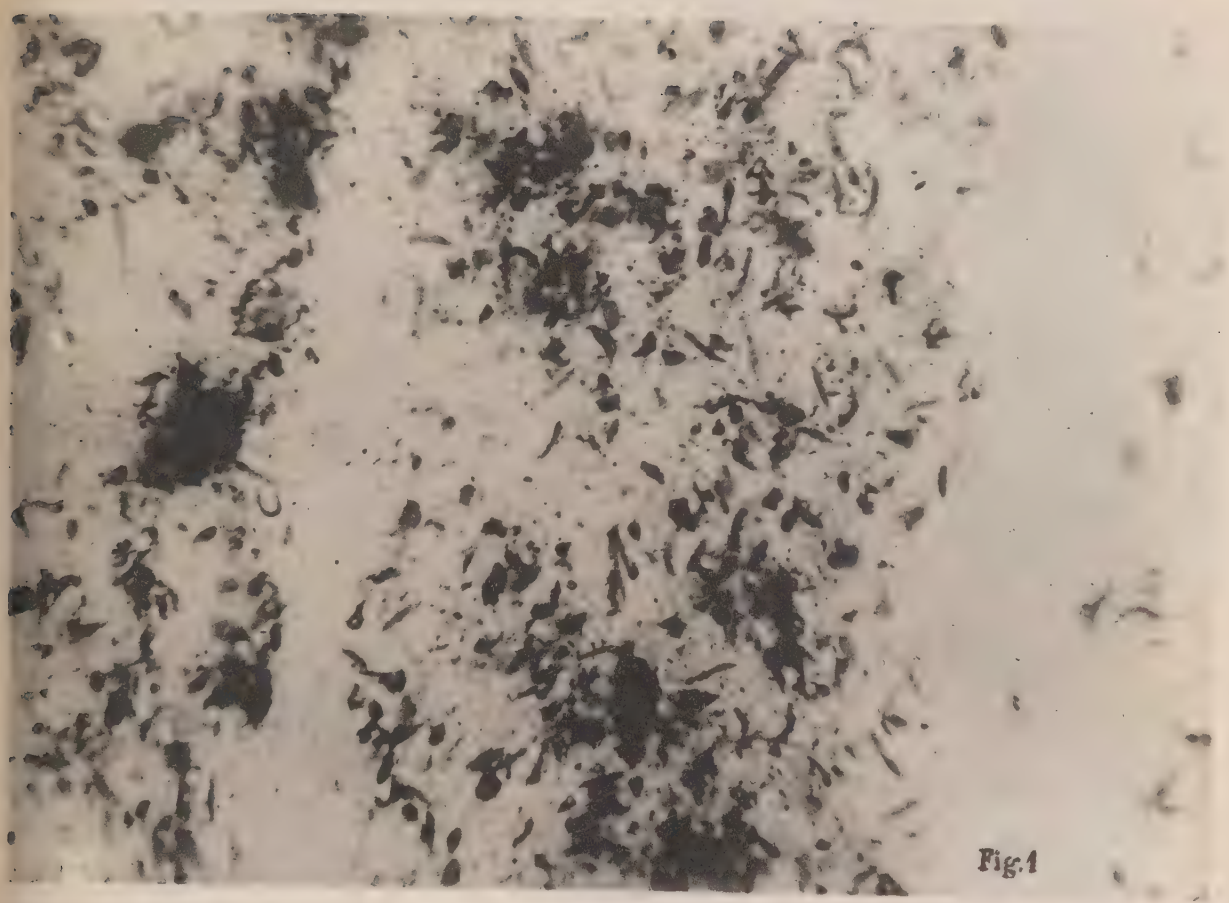

Fig.1

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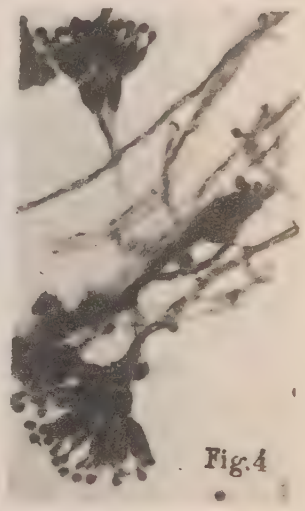

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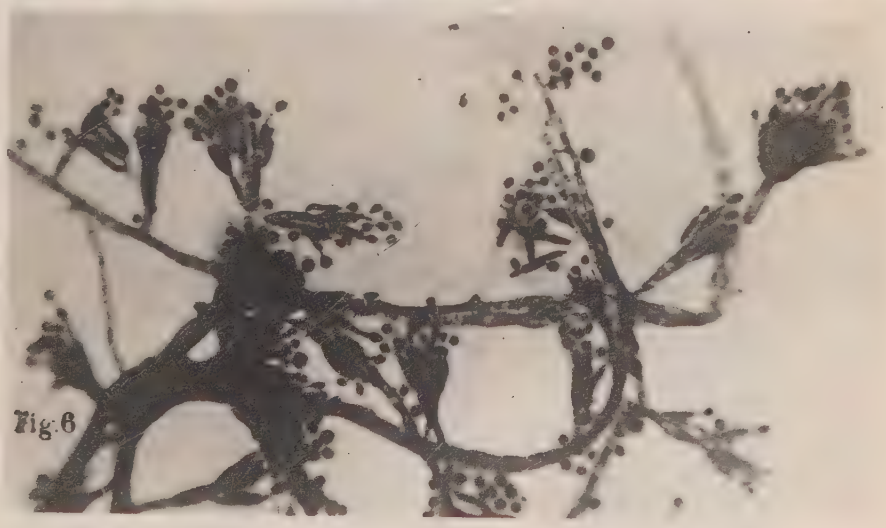

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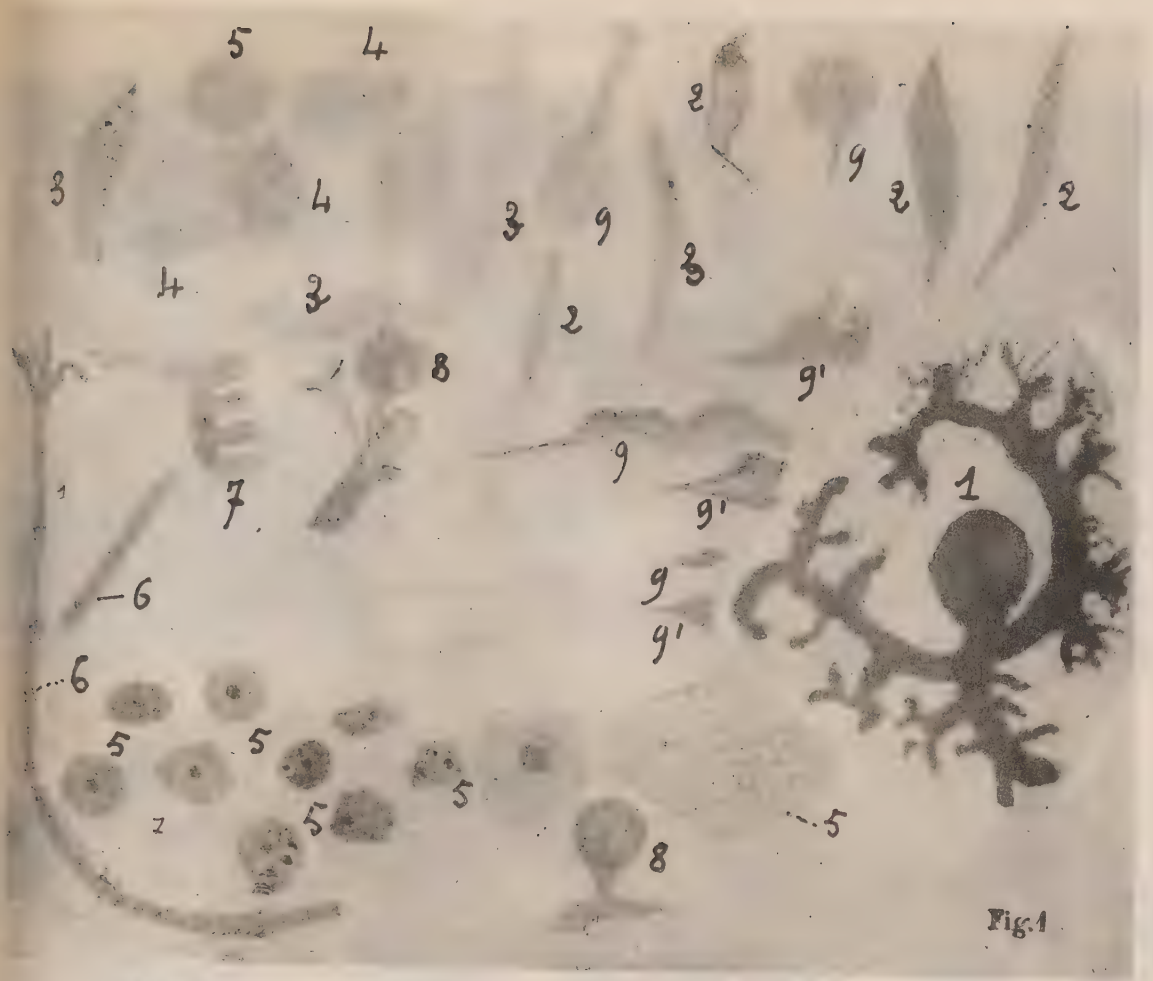

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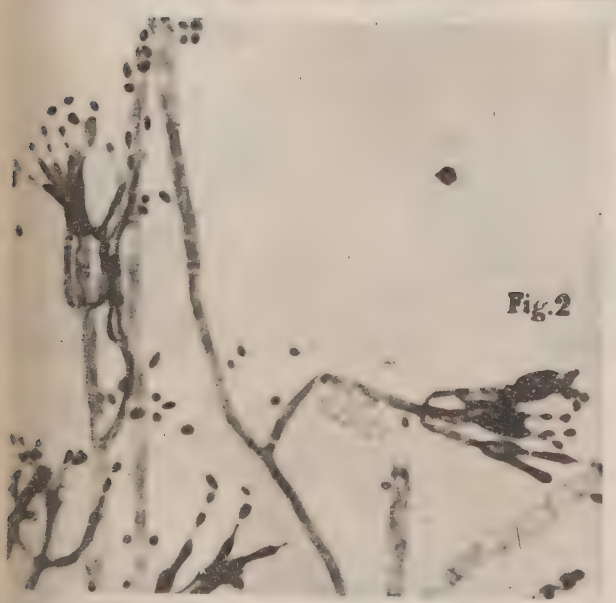


Fig.2

Fig.3

Fig.4

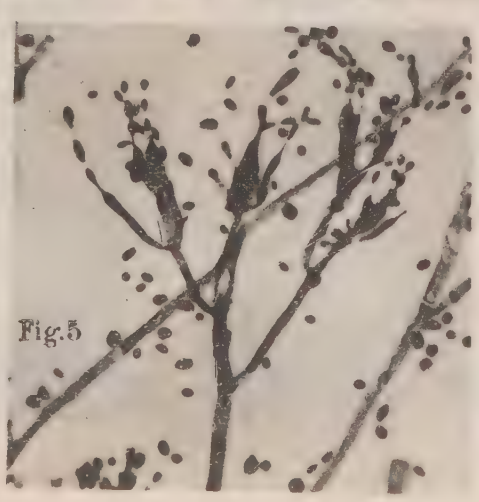
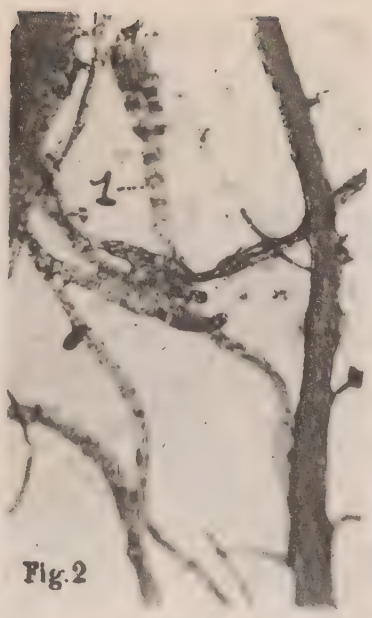


Fig.5

Fig.6

Fig.1



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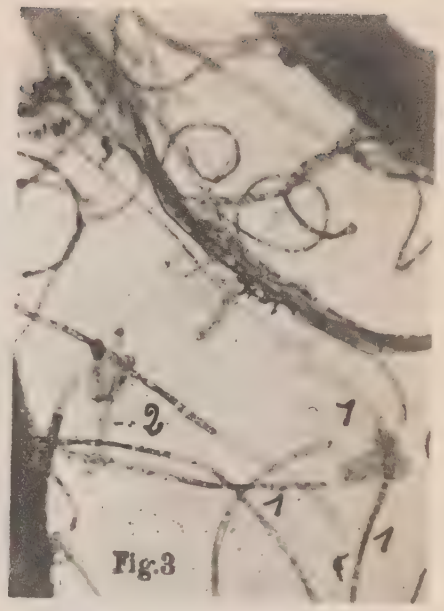
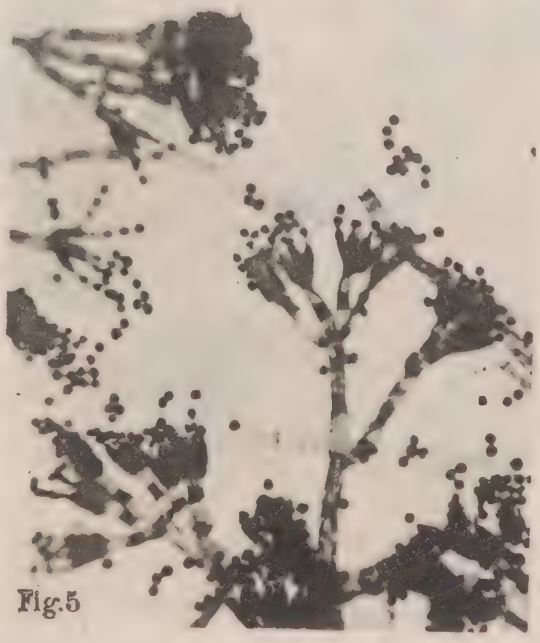


Fig.3

Fig.4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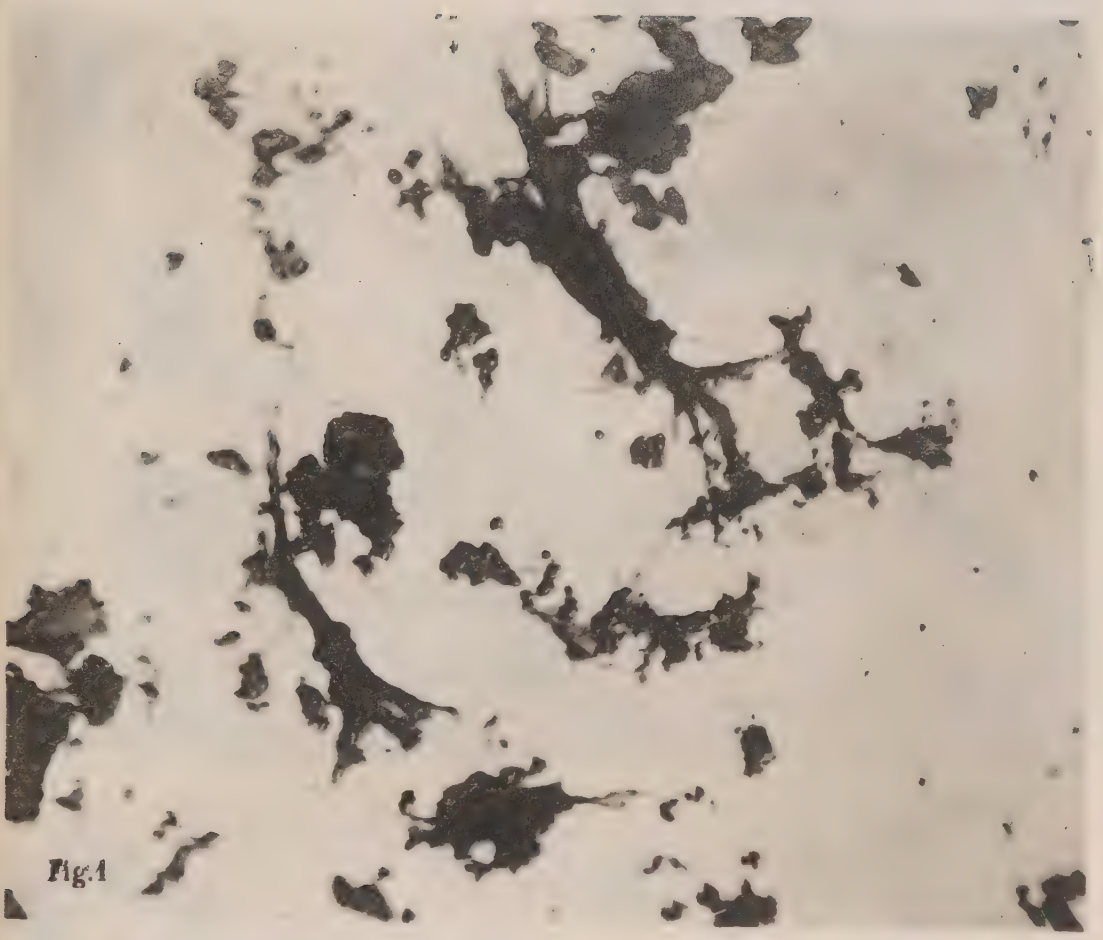
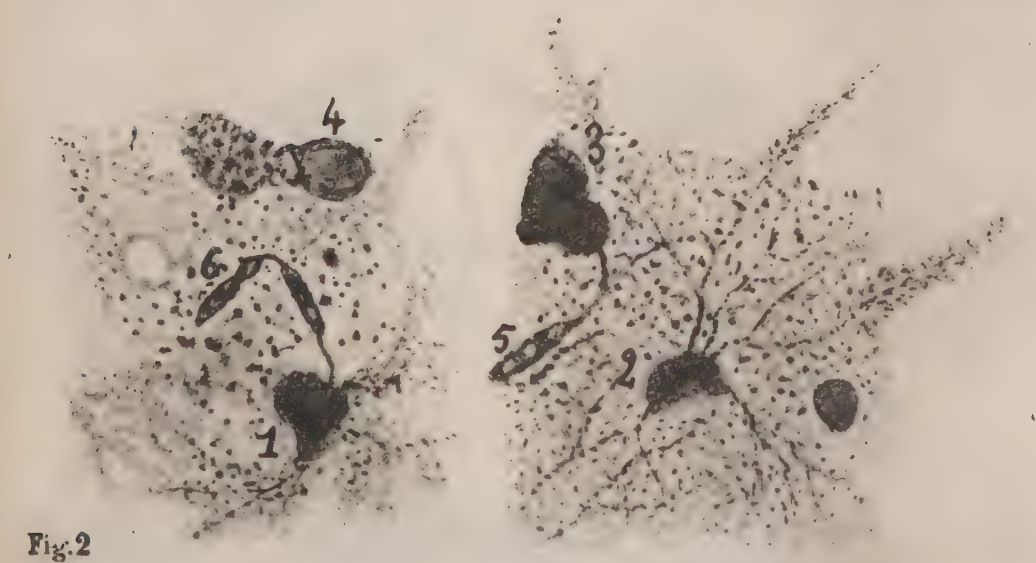


Fig.1



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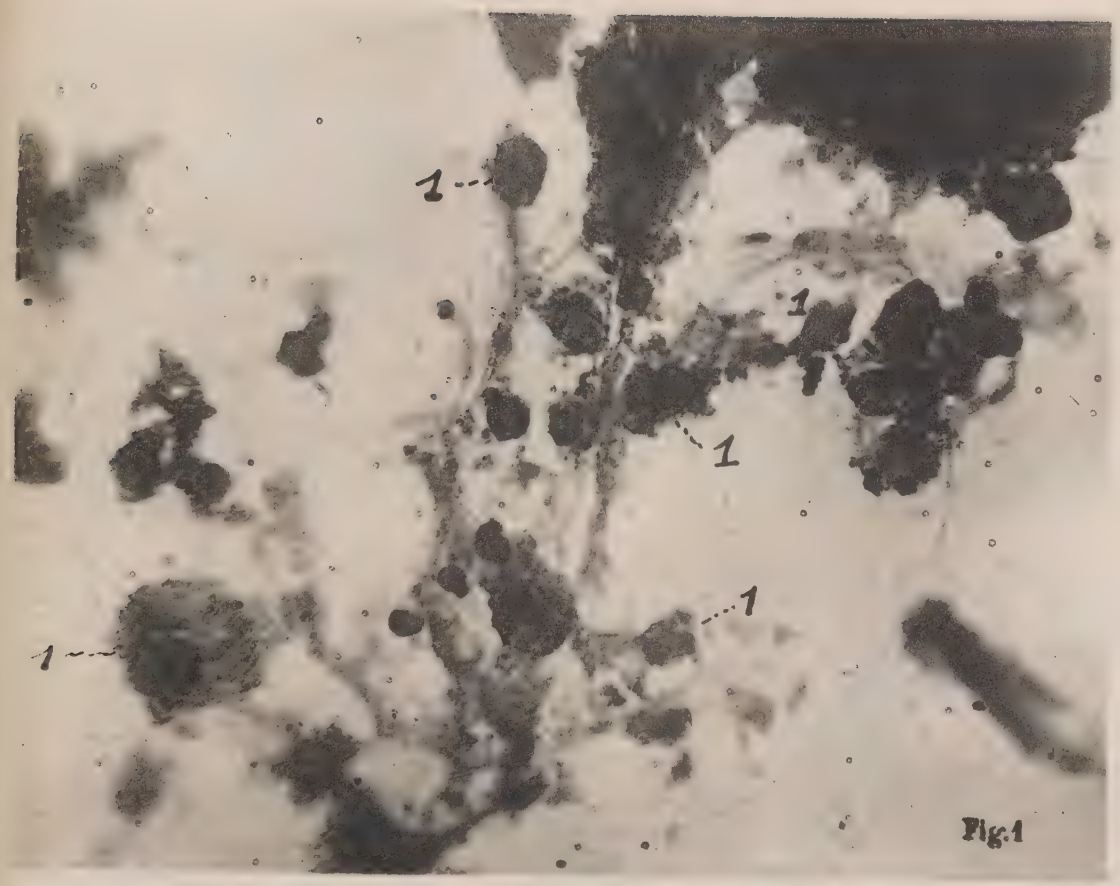

Fig.1

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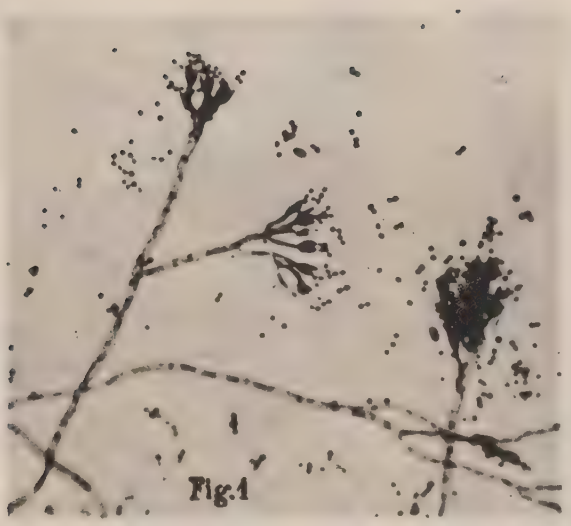

Fig.1

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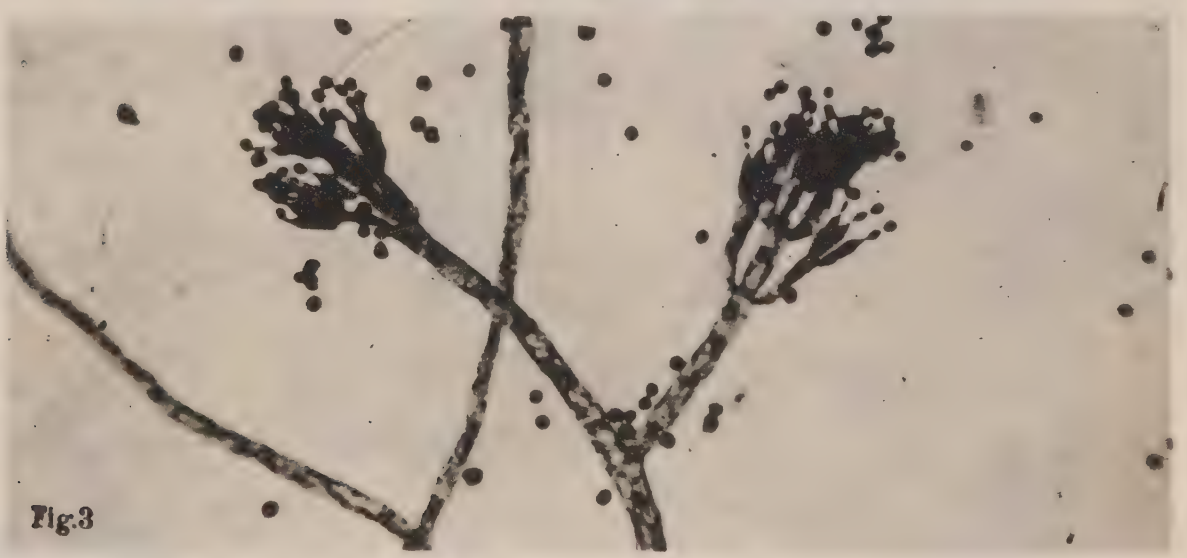

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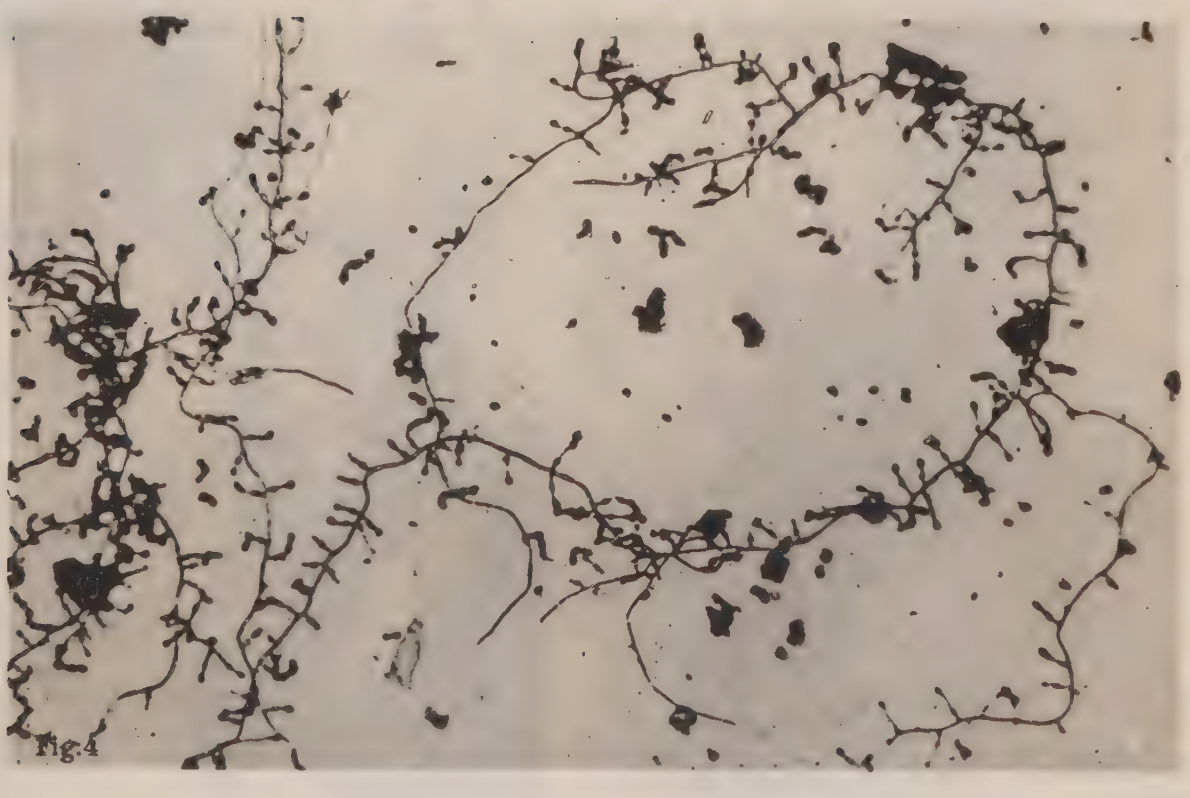

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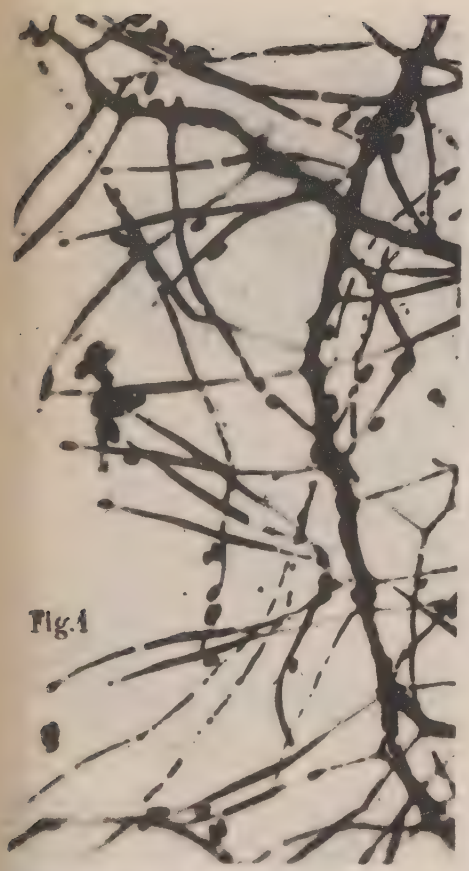

Fig.1

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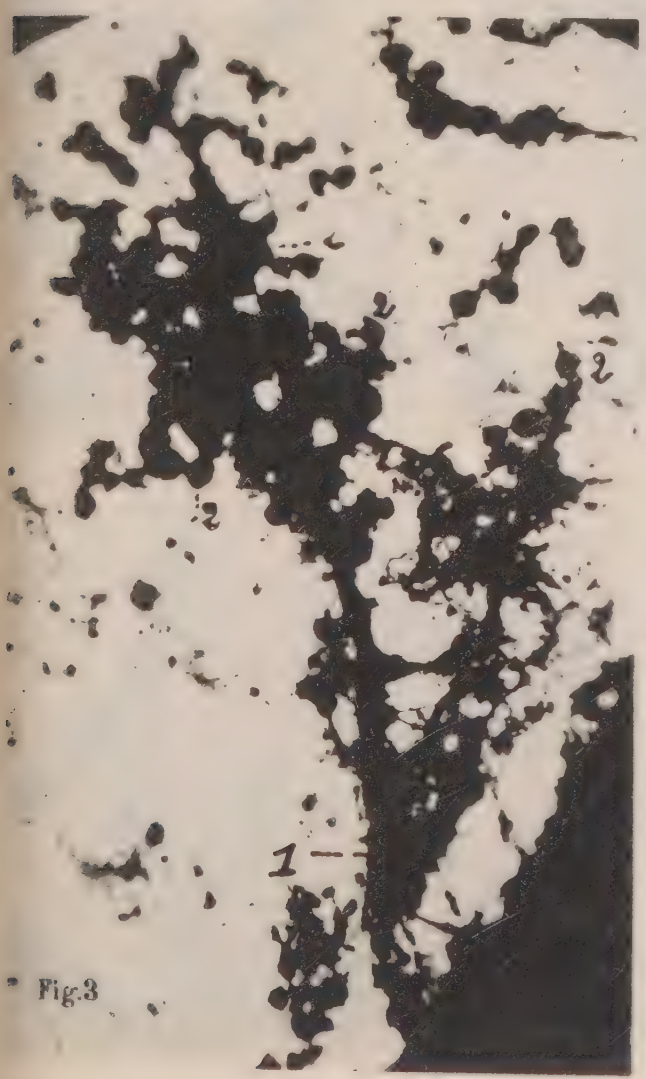

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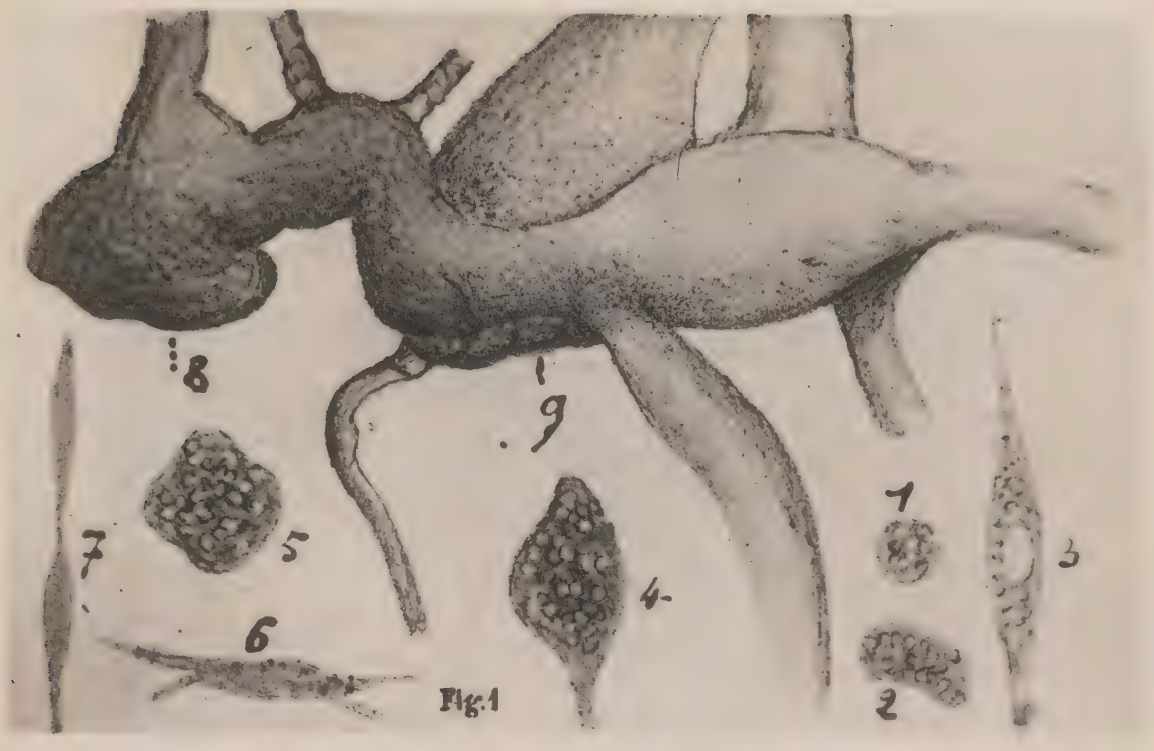

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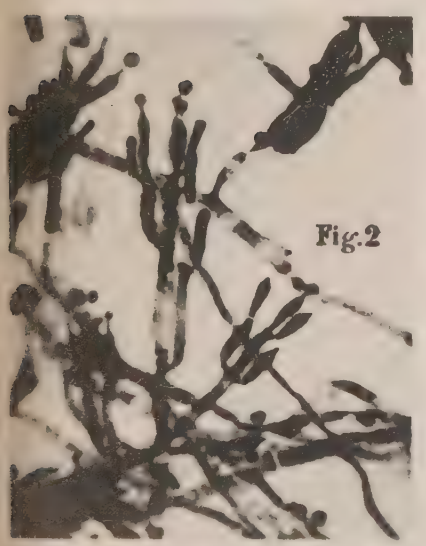
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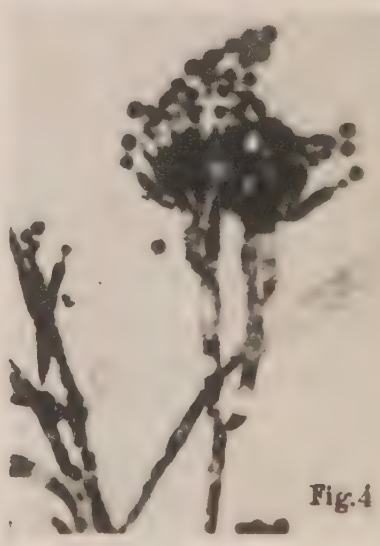
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Fig. 1

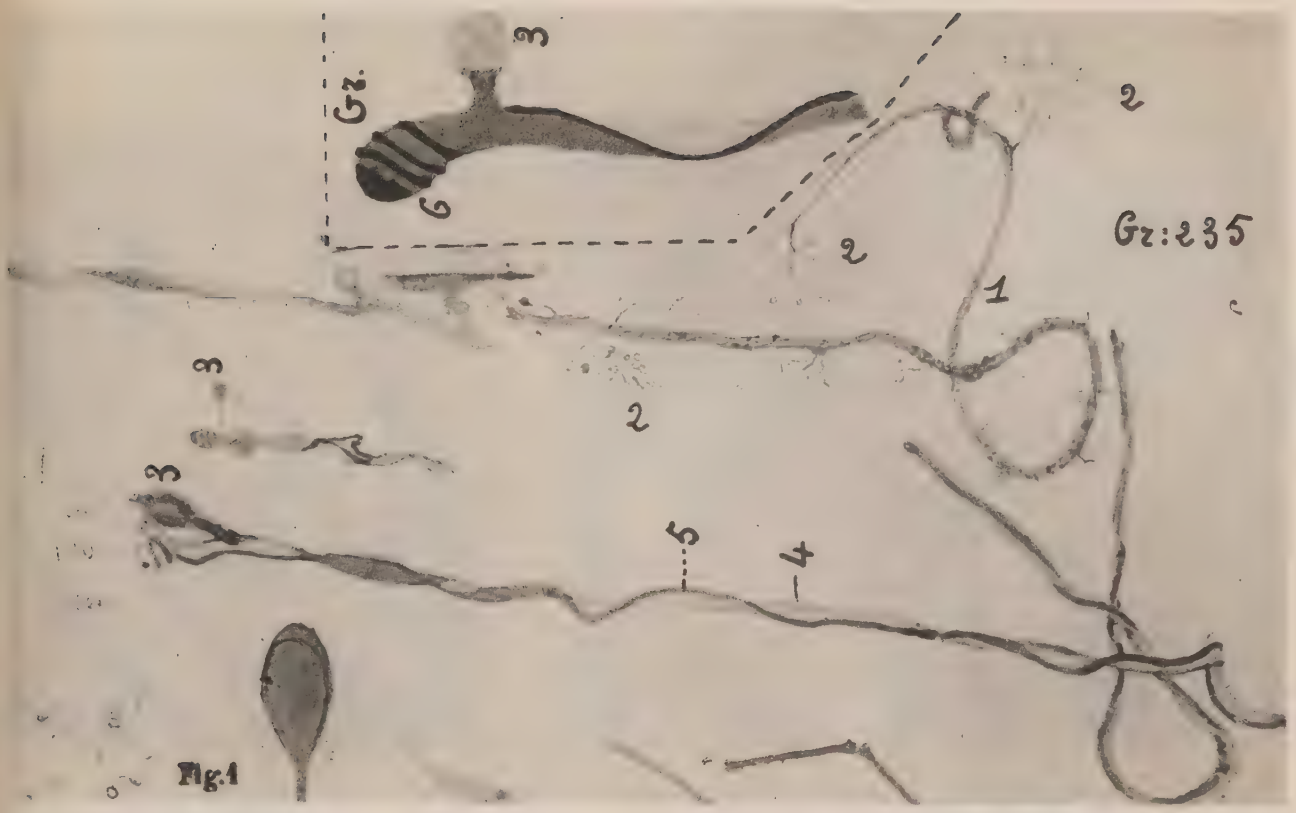

Fig.1

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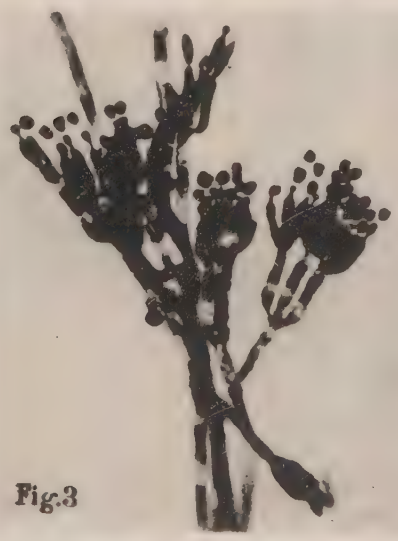
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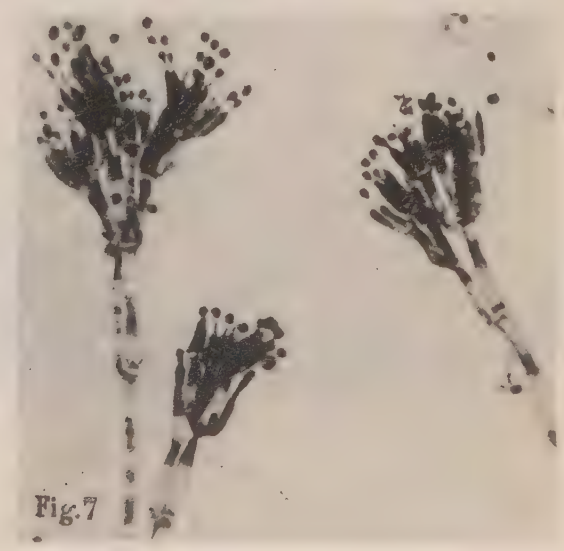
Fig.7

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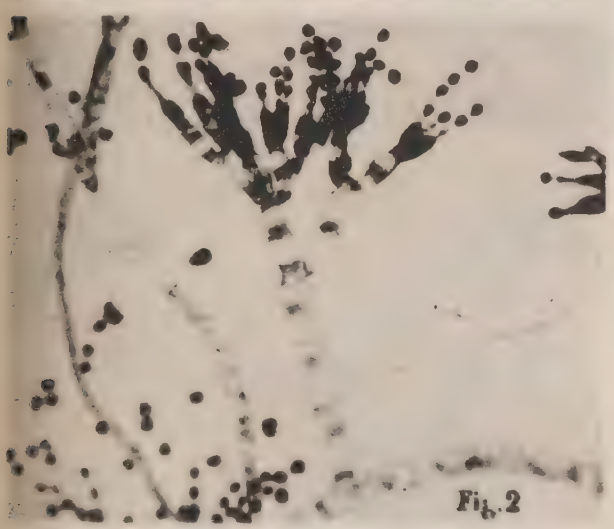
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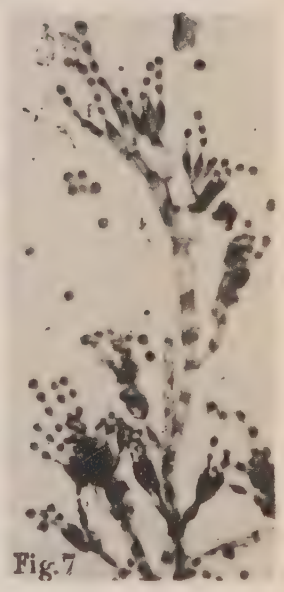
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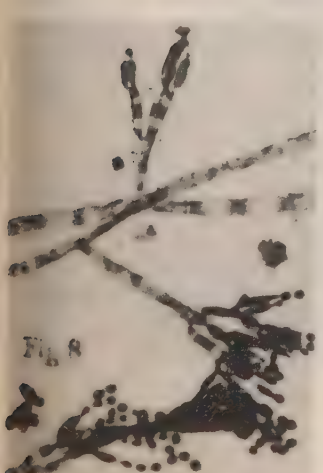
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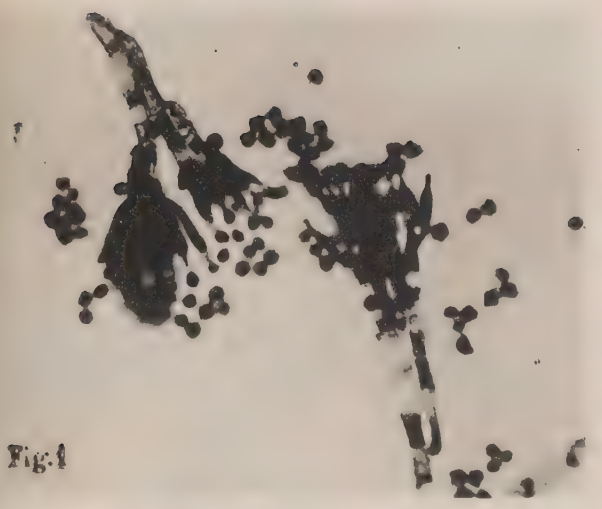
Fig.11



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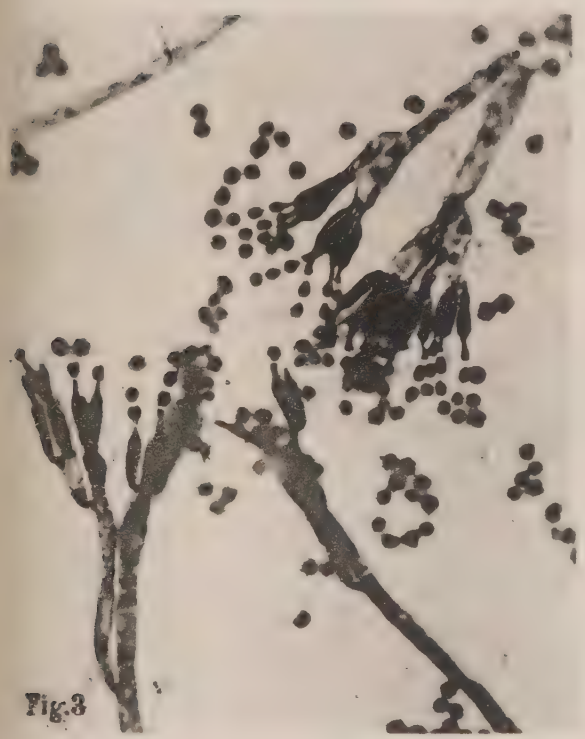

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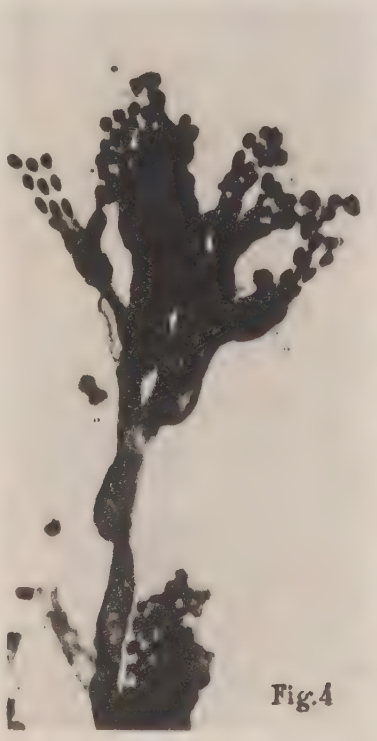

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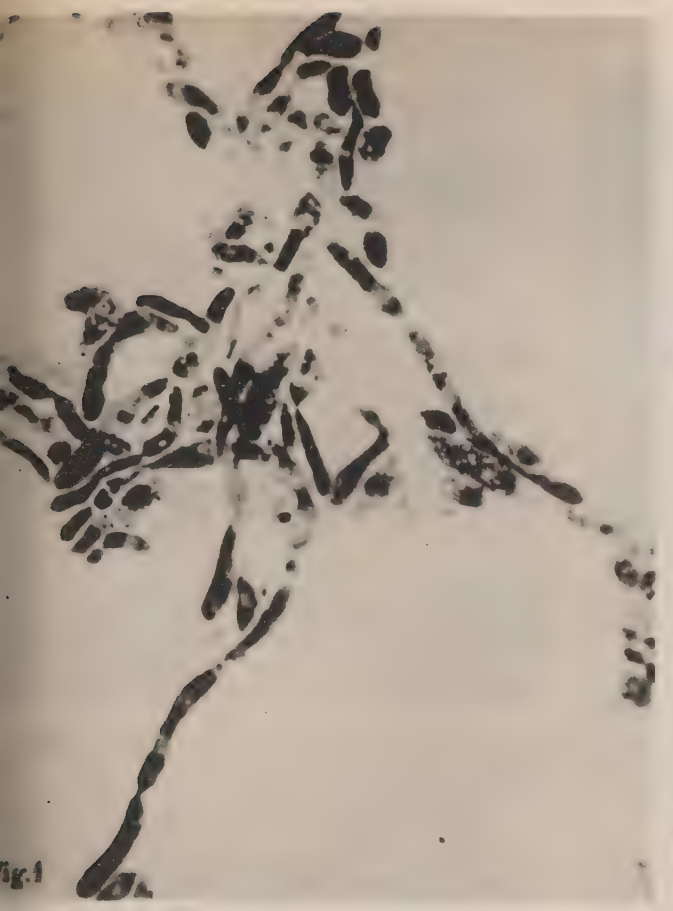

Fig.1

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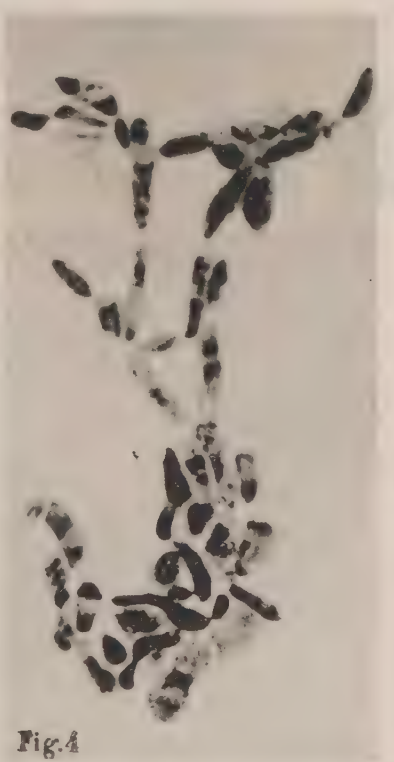

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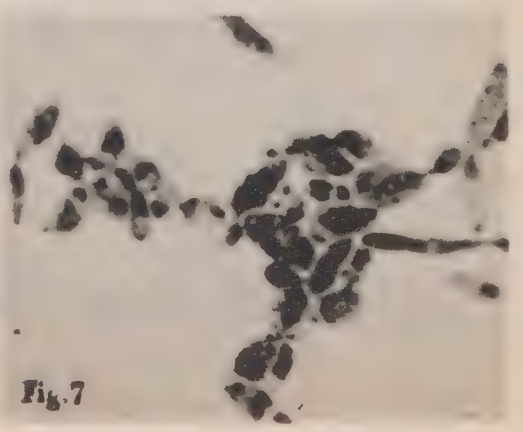

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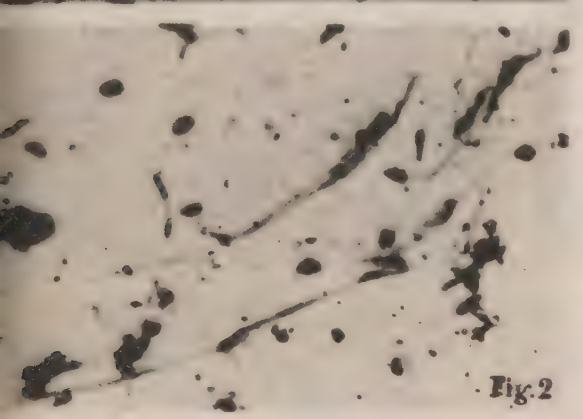

Fig.2

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Fig.4

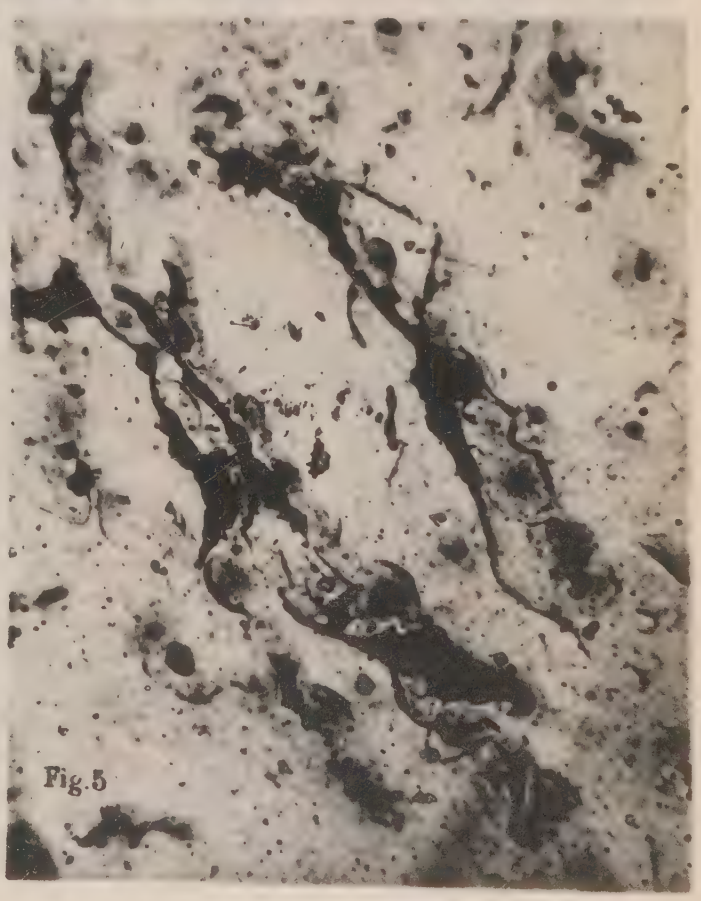

Fig.5

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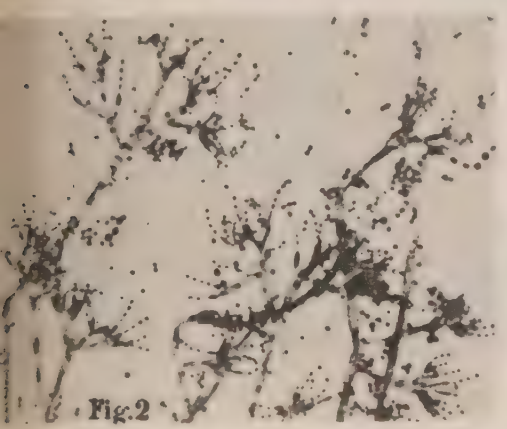

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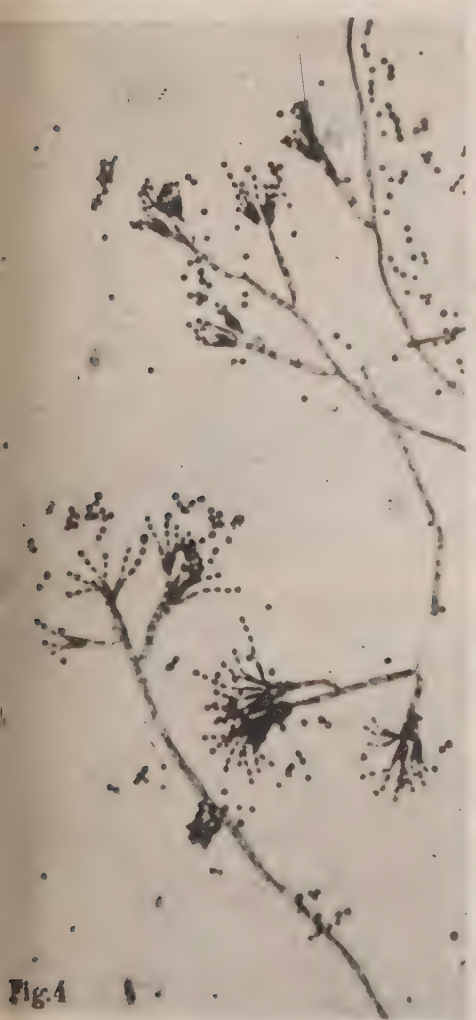

Fig.4

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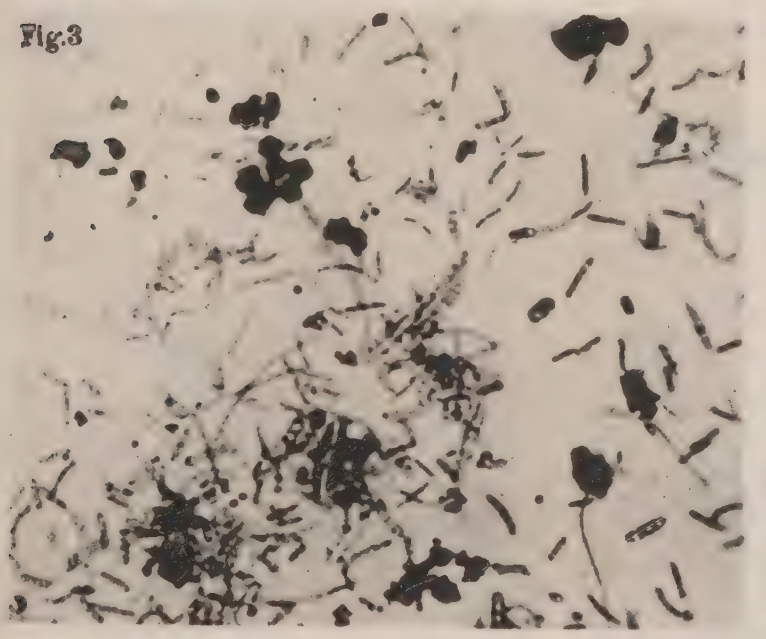


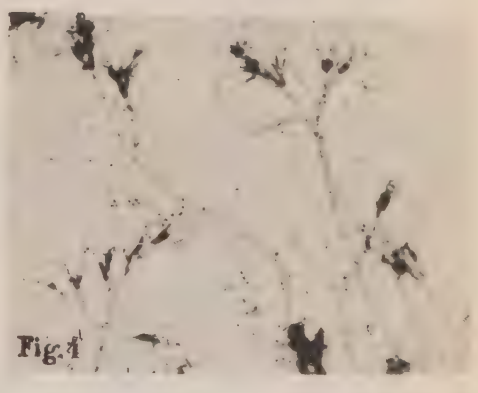
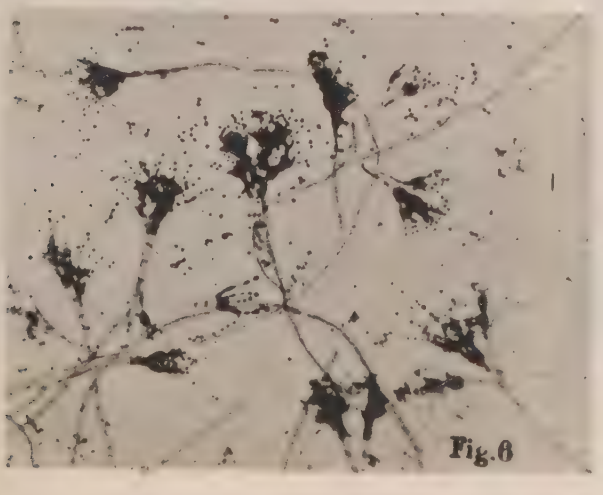


Fig.4

Fig.5



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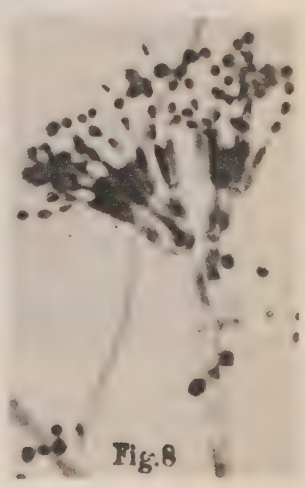

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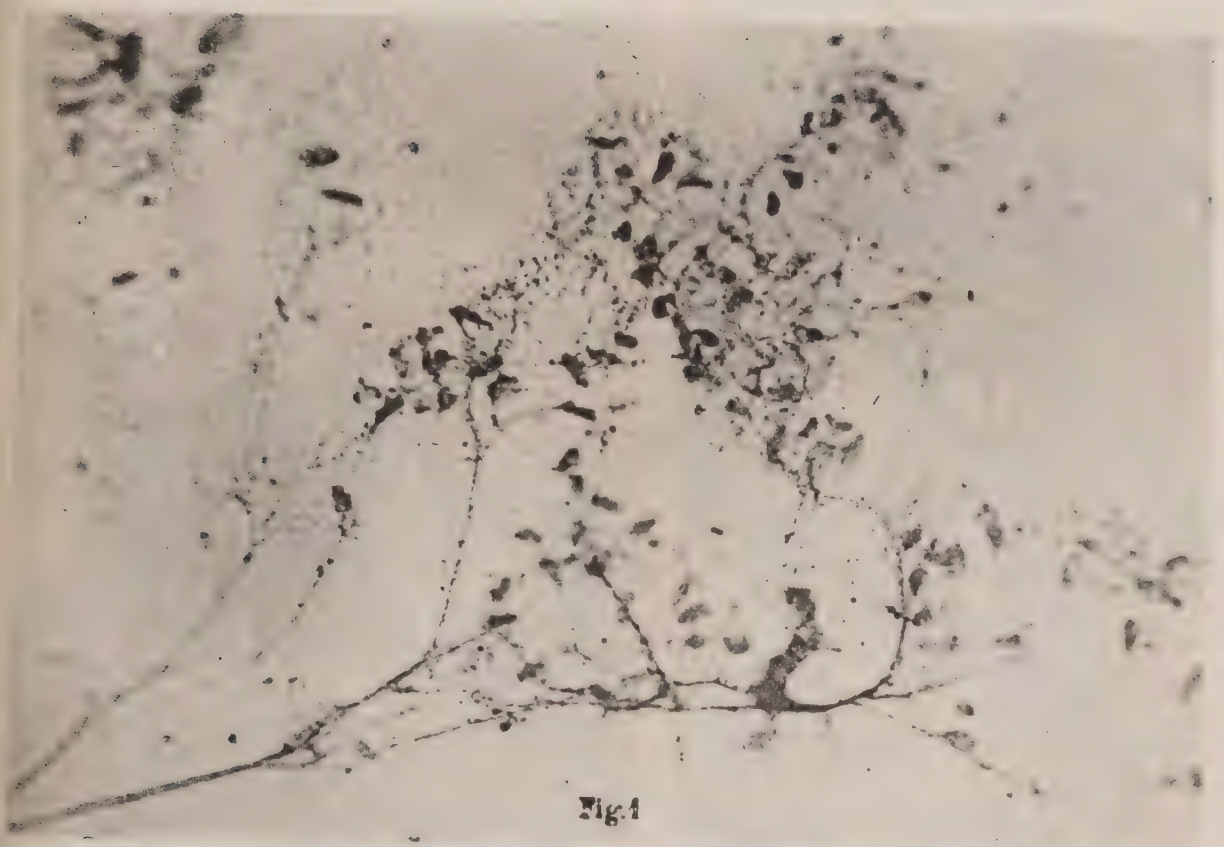
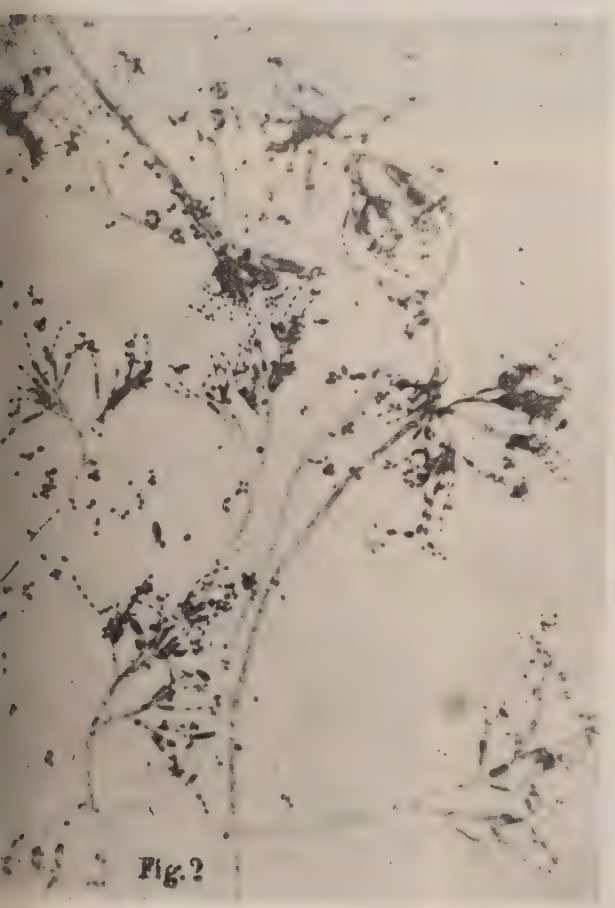


Fig.1



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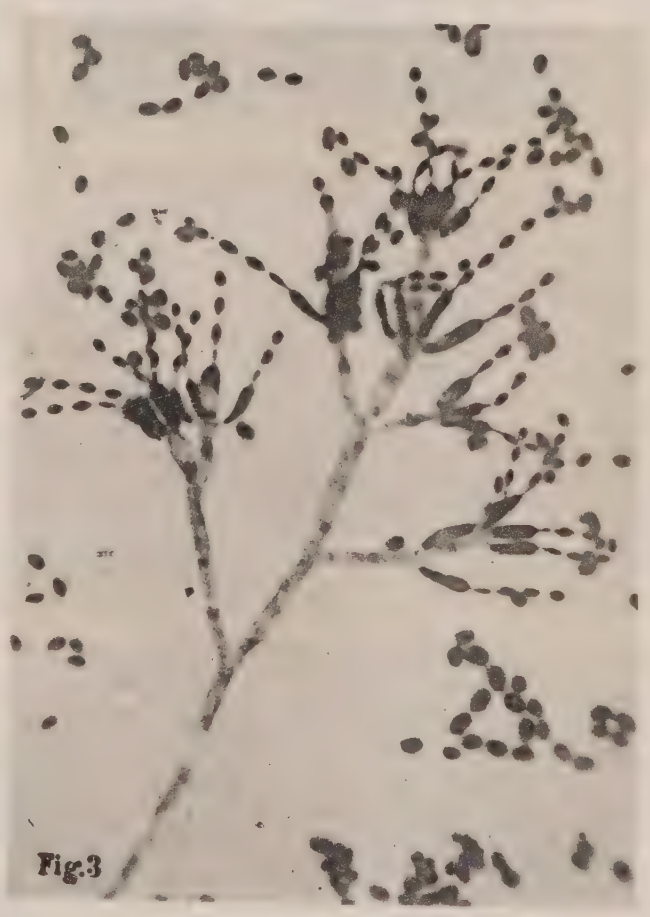

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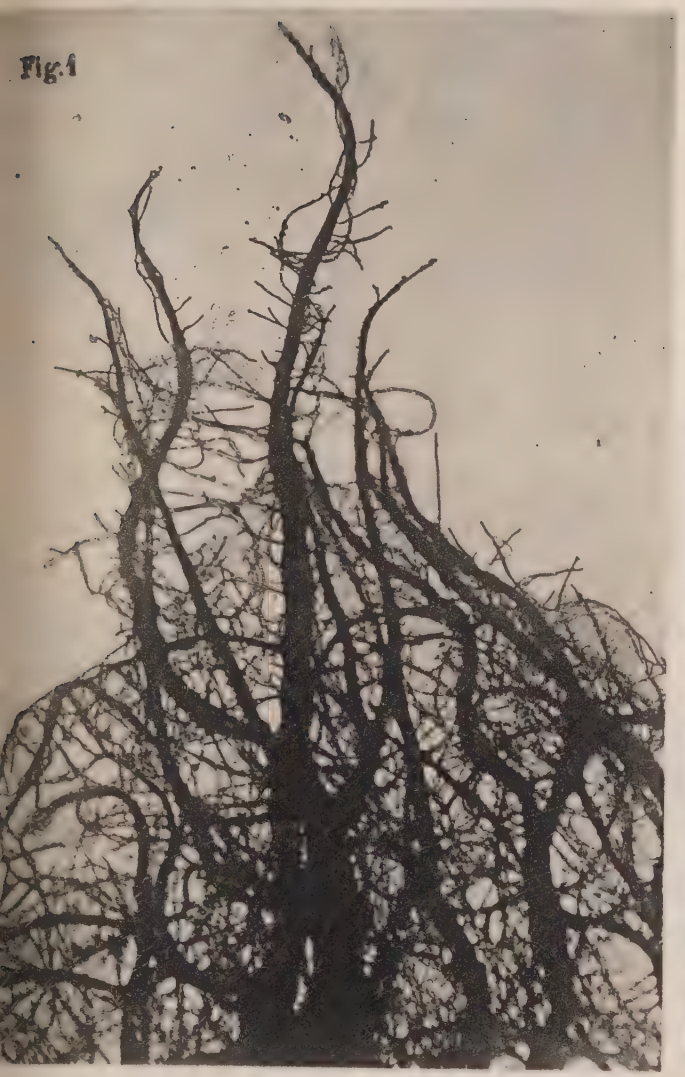
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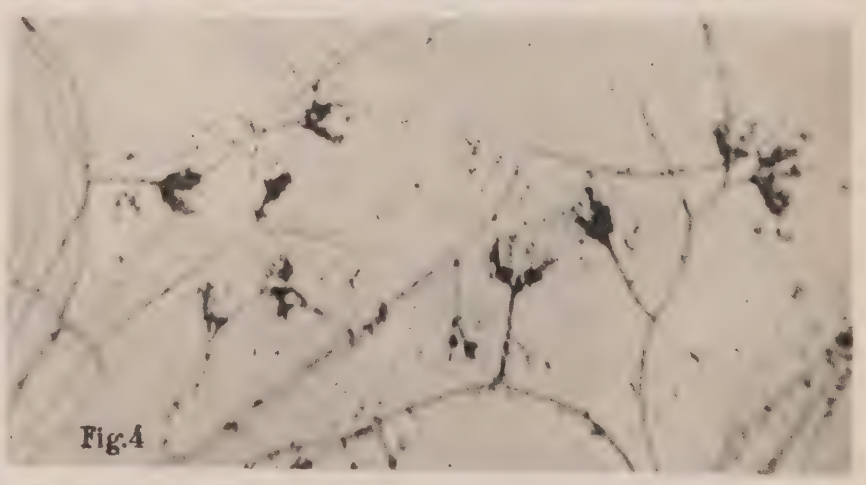
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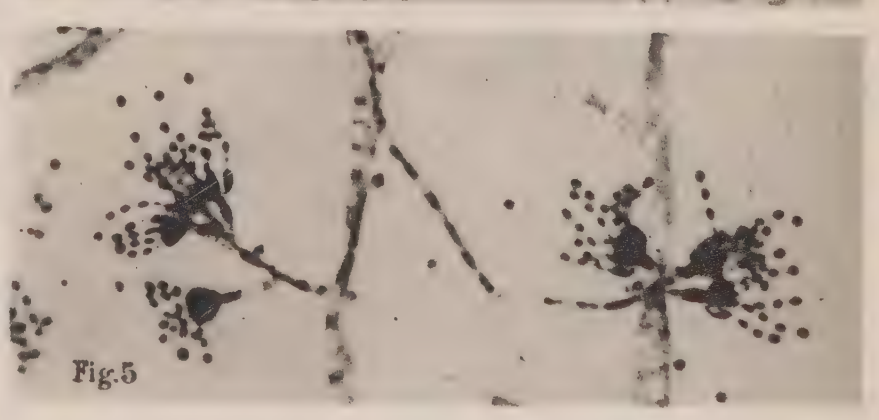
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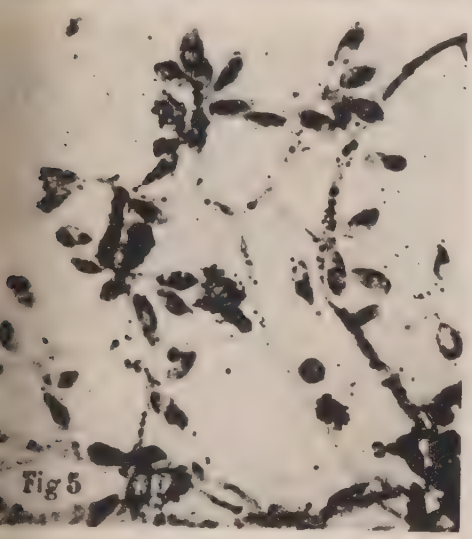

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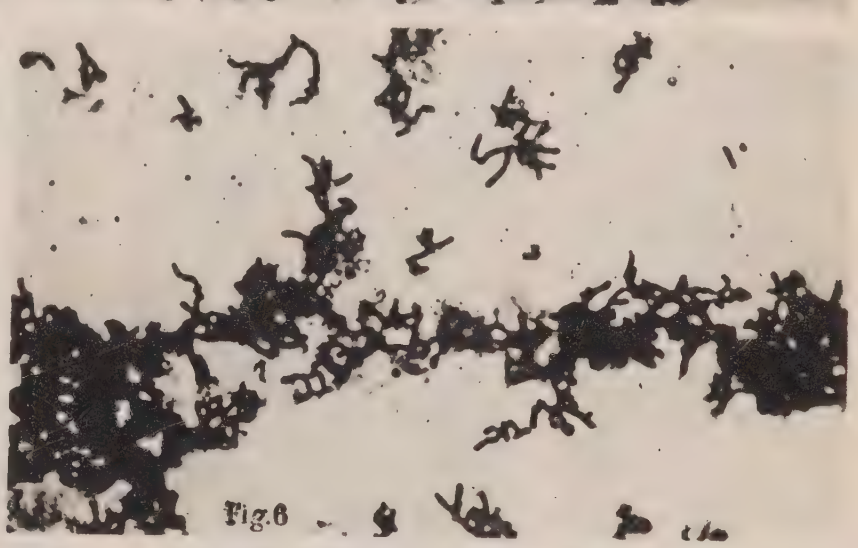

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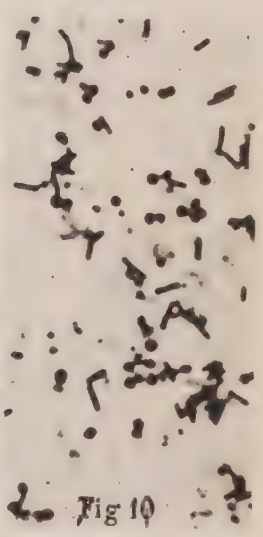

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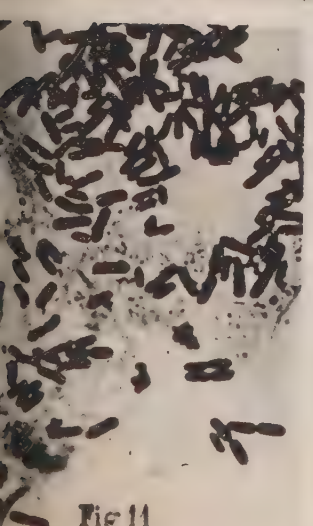

Fig 11

Fig 12

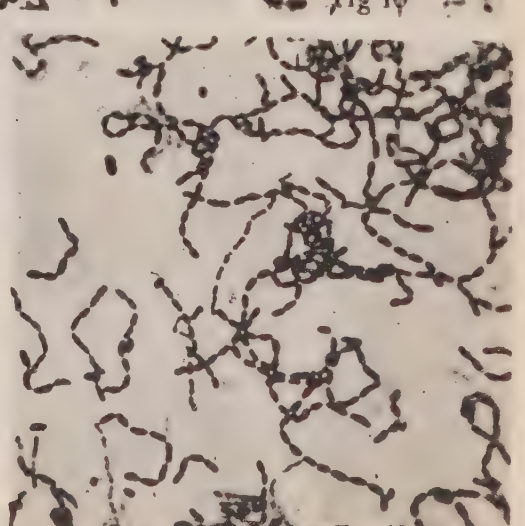

Fig 13

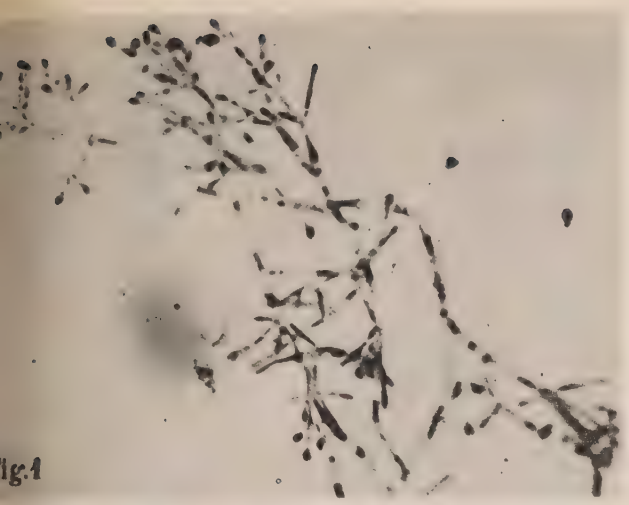

Fig.1

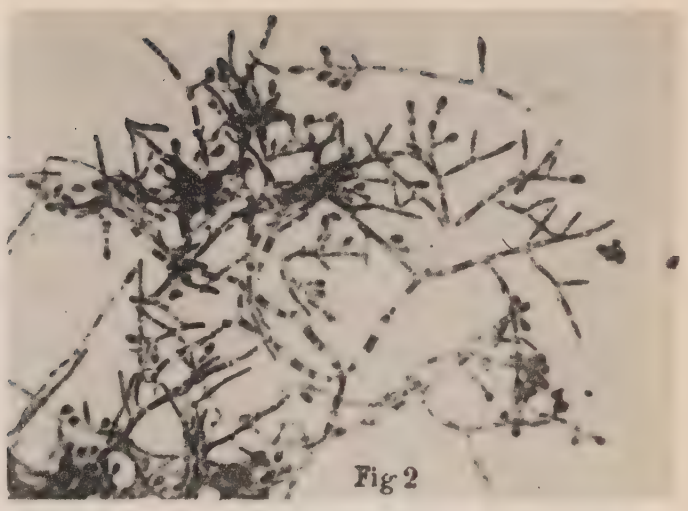

Fig 2

Fig.3

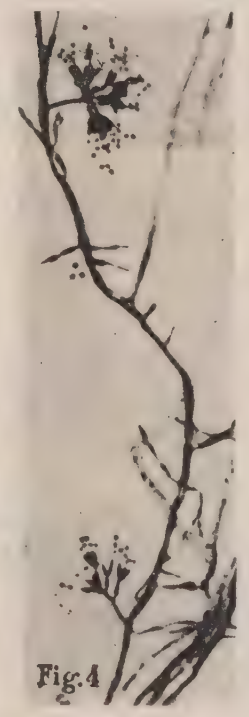

Fig.4

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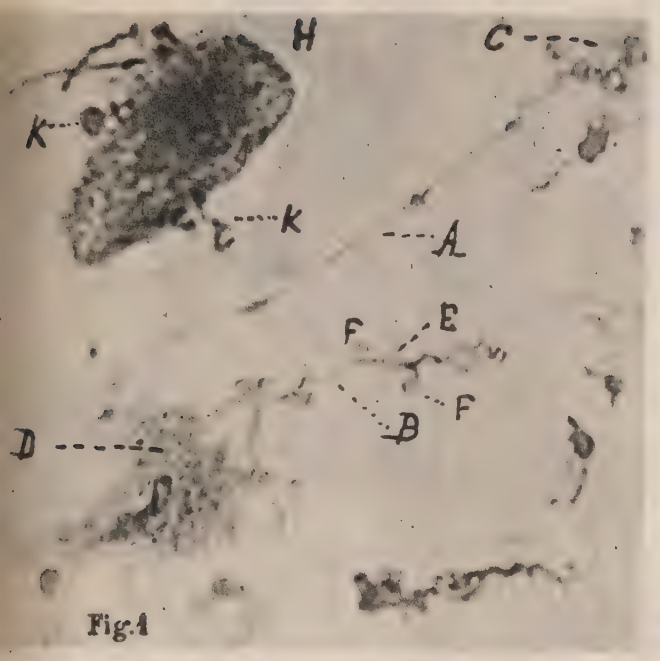

Fig.1

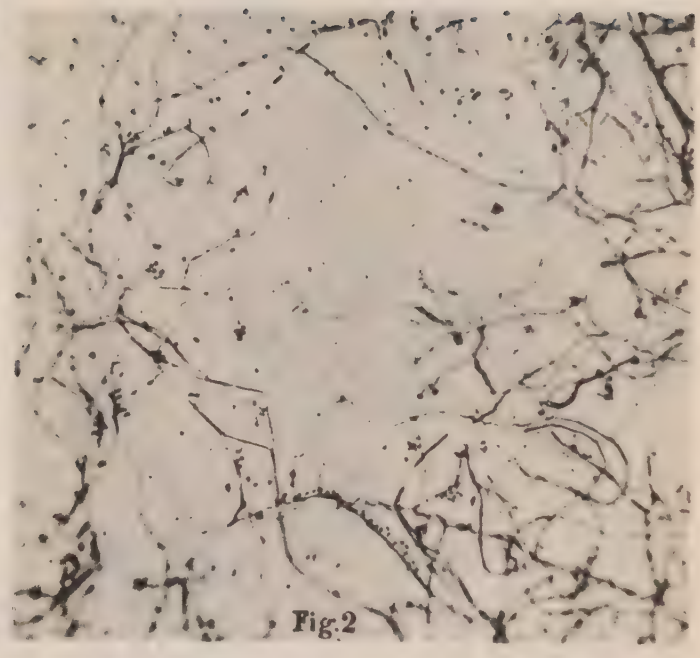
Fig.2

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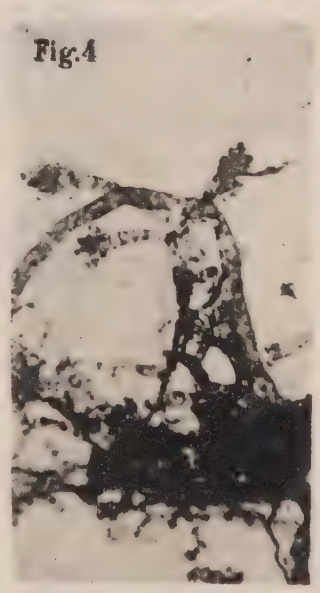
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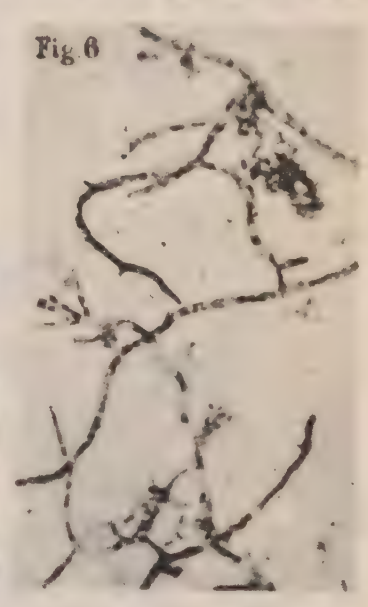
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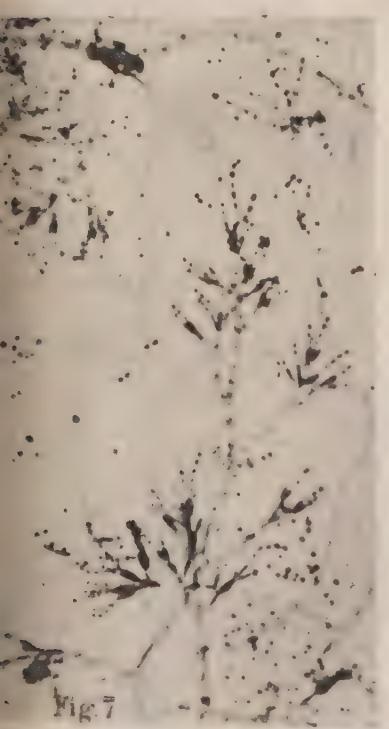
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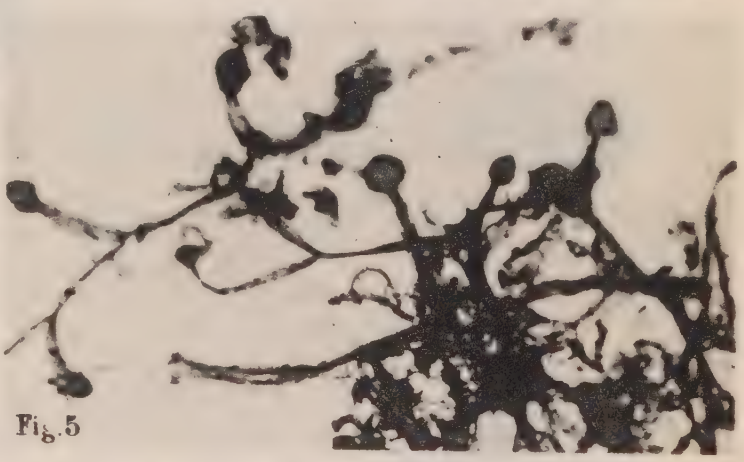

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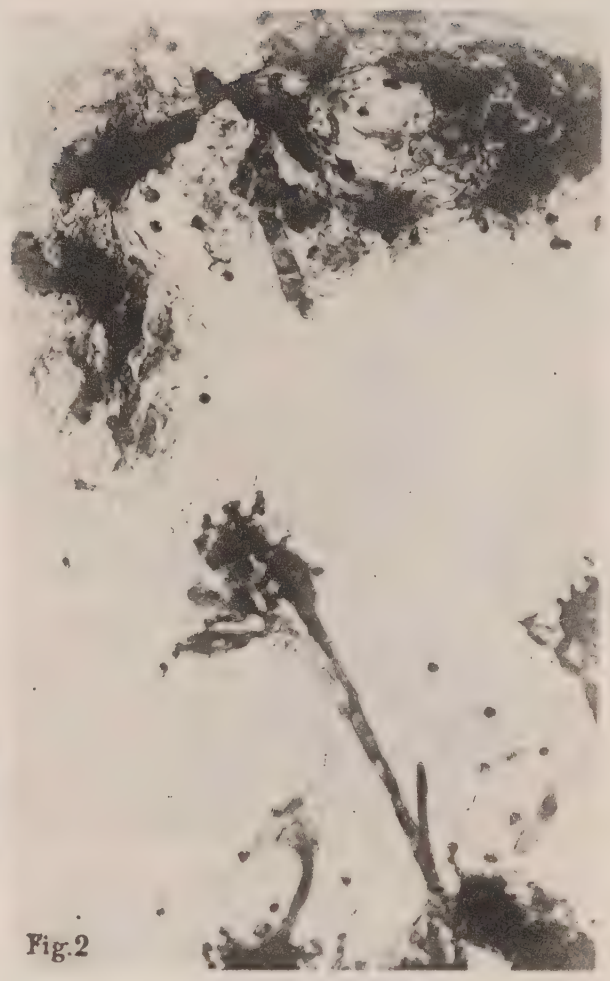

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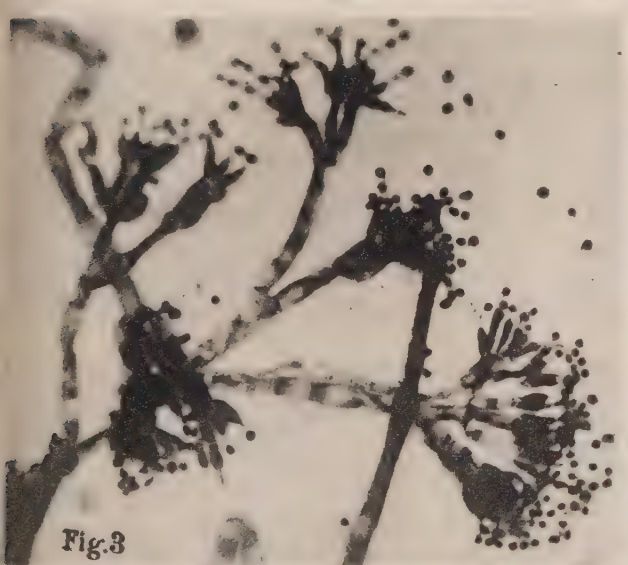

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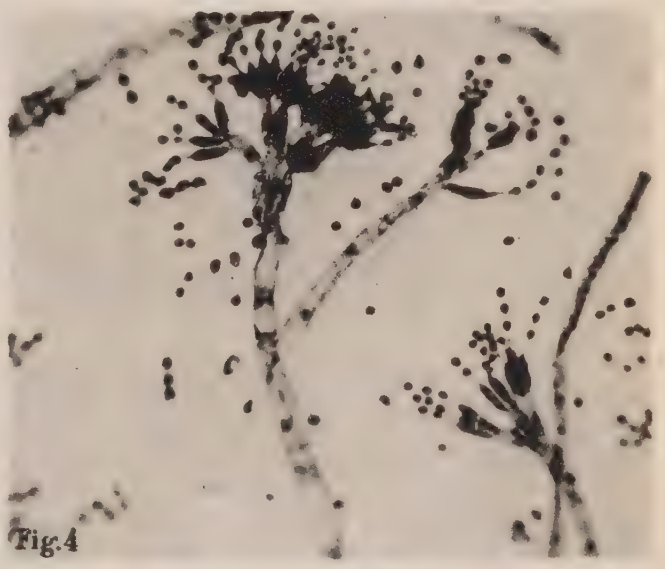

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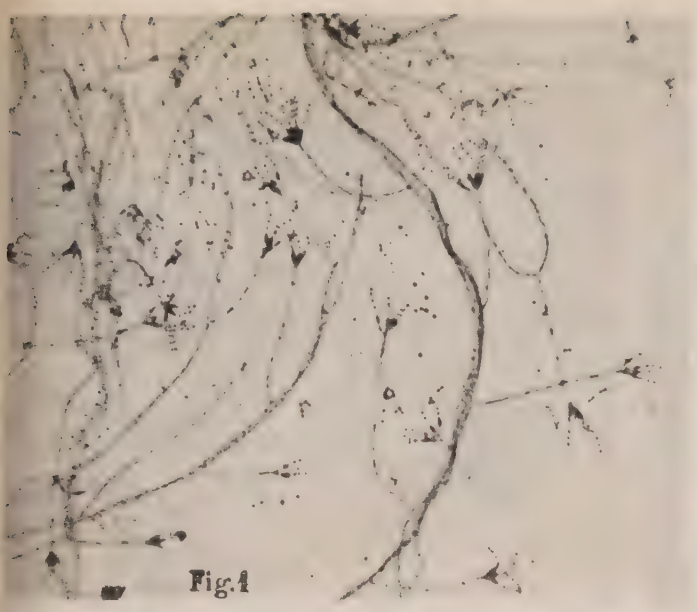

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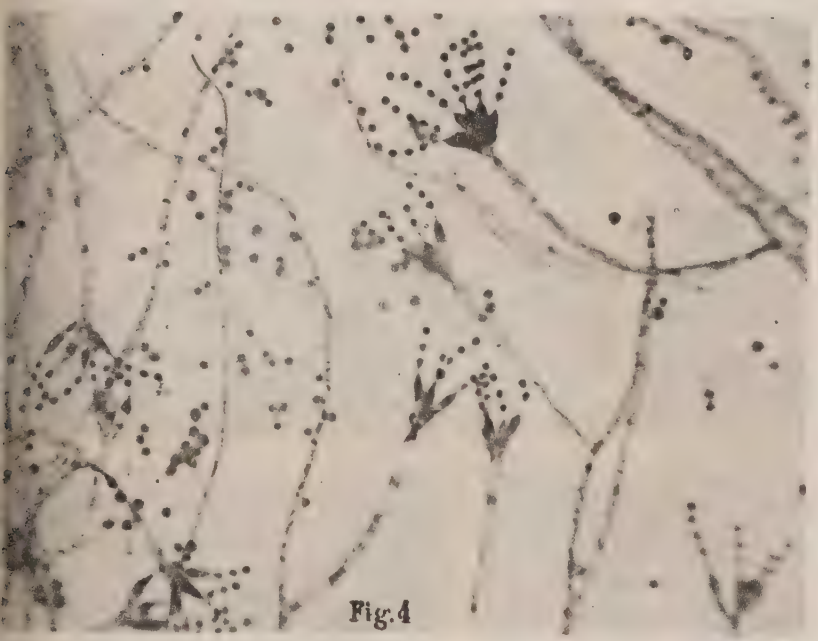

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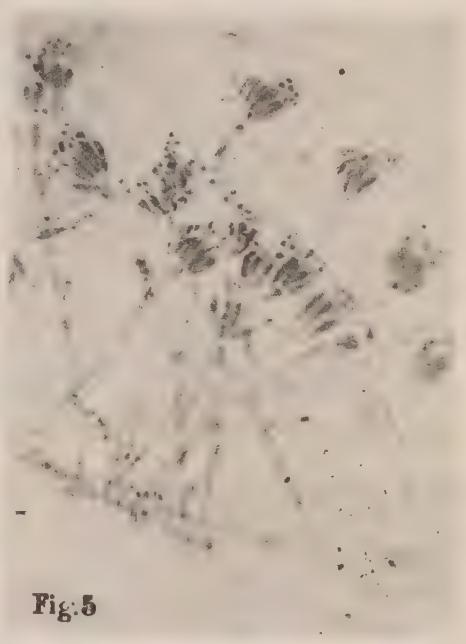

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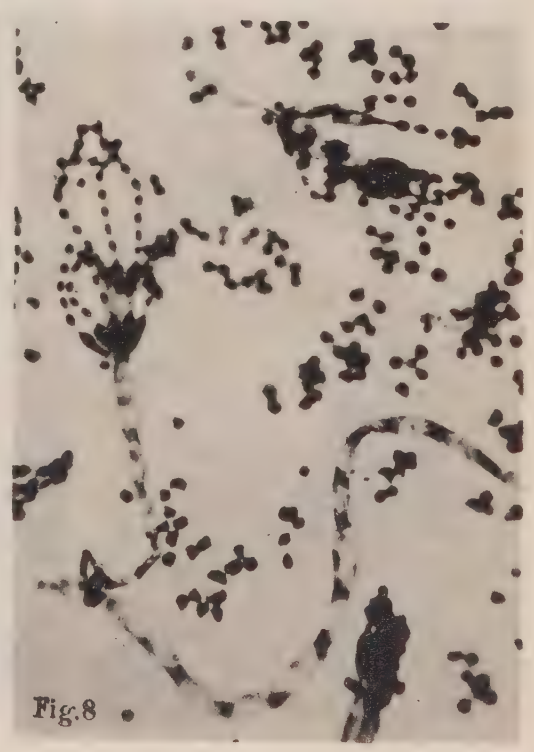

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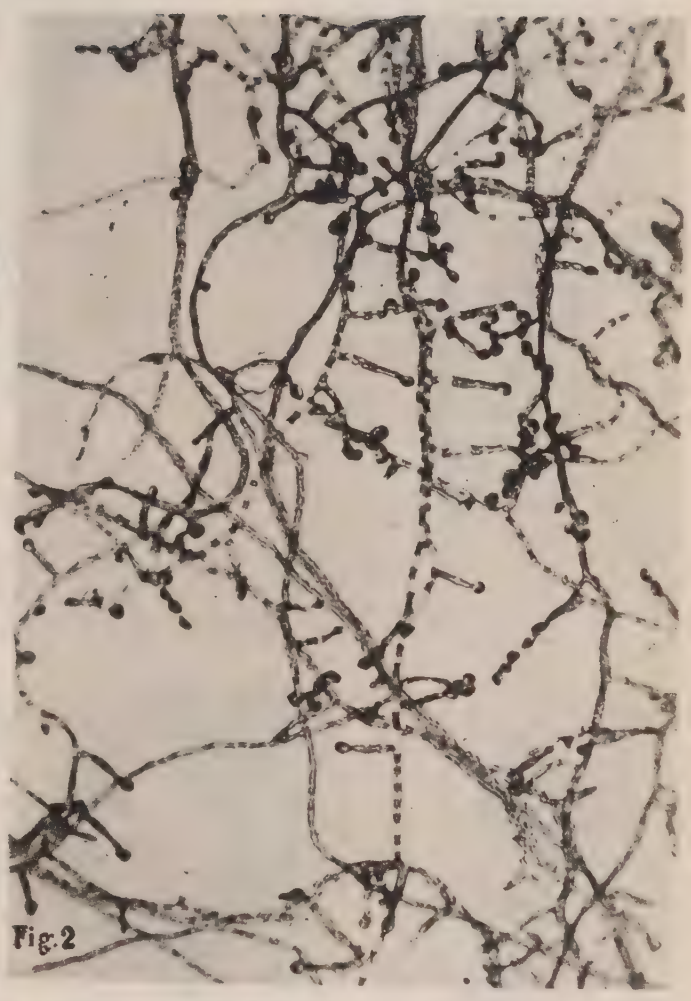

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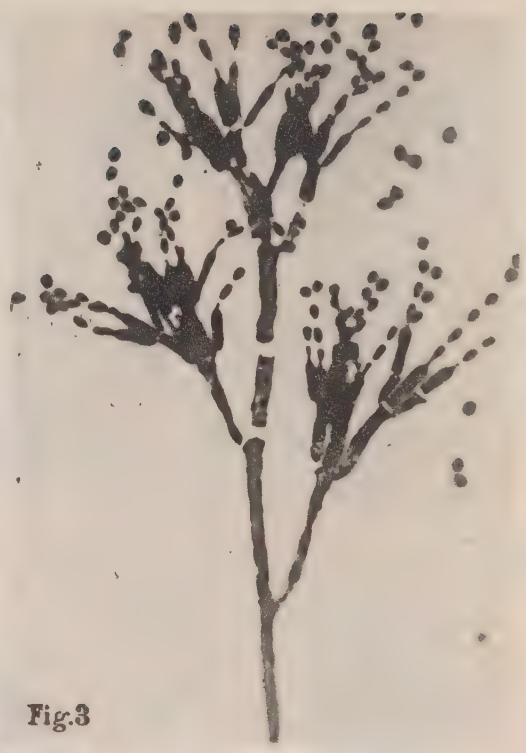

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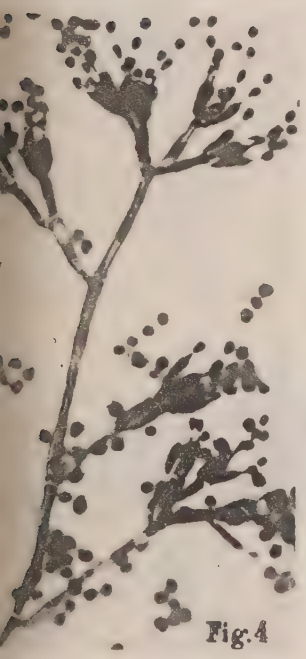

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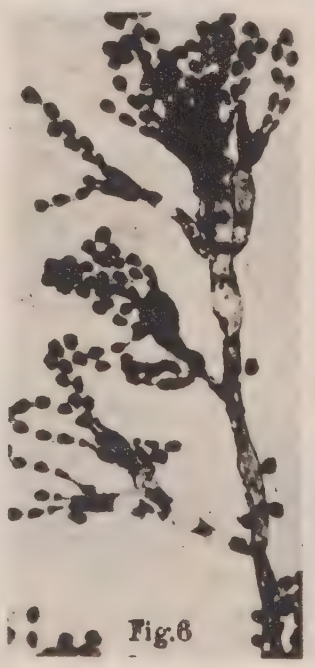

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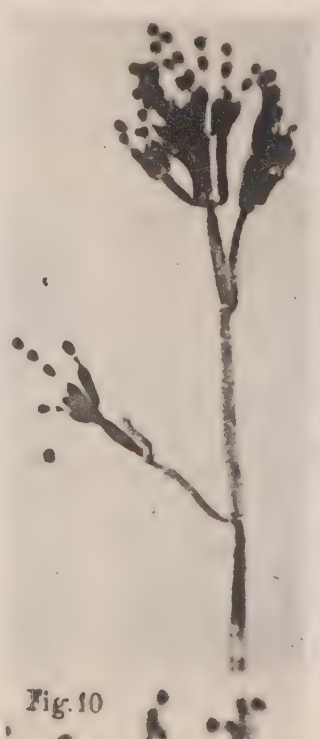

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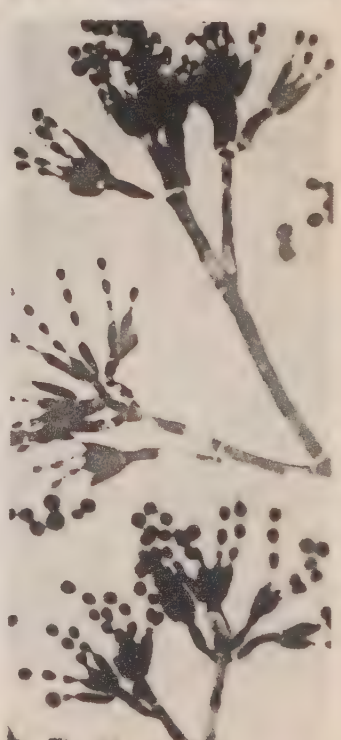

Fig.11

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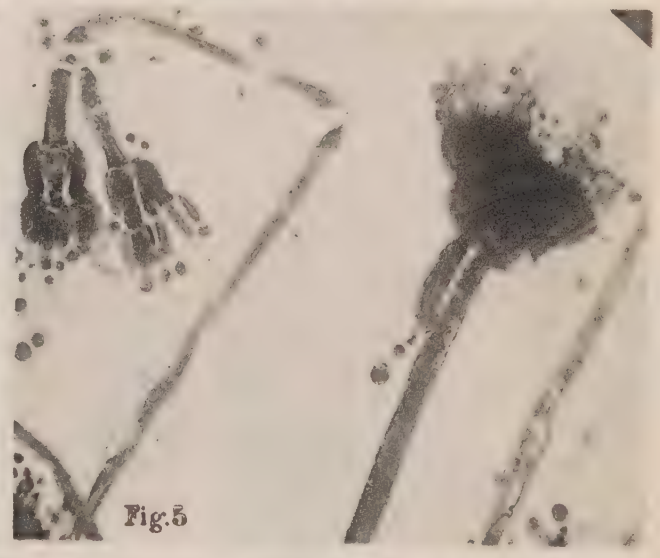

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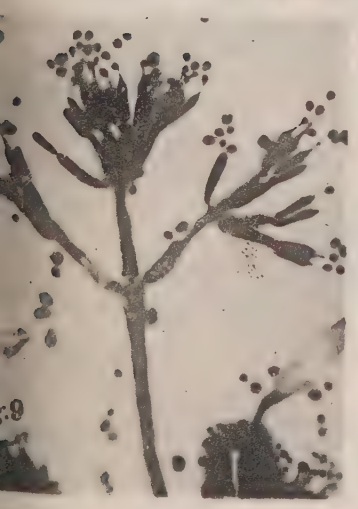

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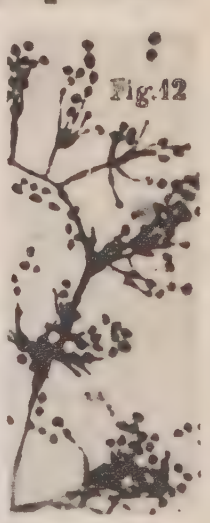

Fig.12

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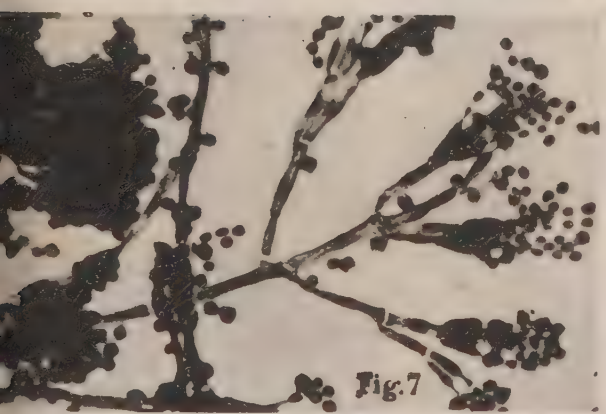

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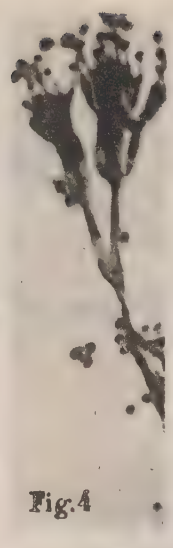
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Fig 5

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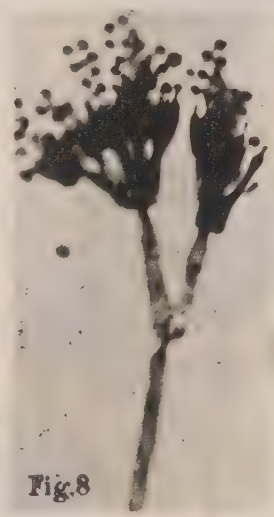
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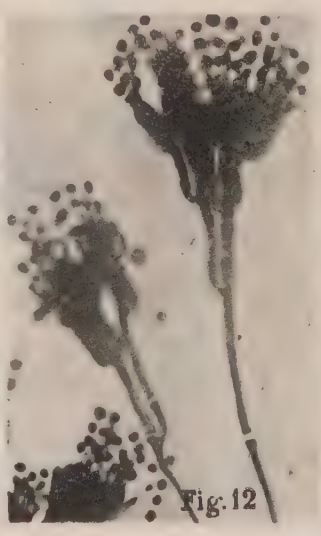
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Fig.13

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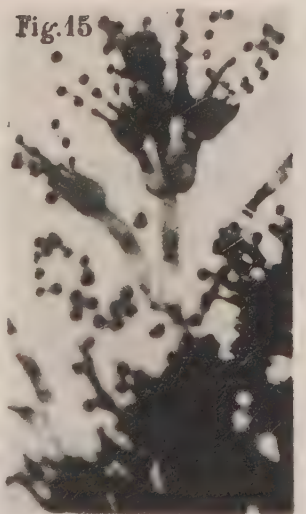
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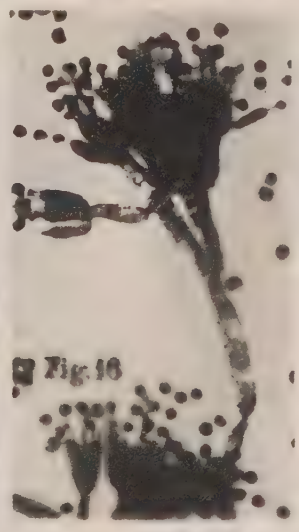
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Fig.17

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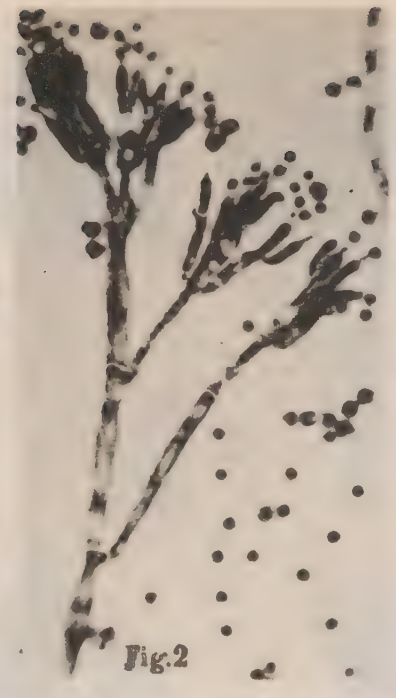

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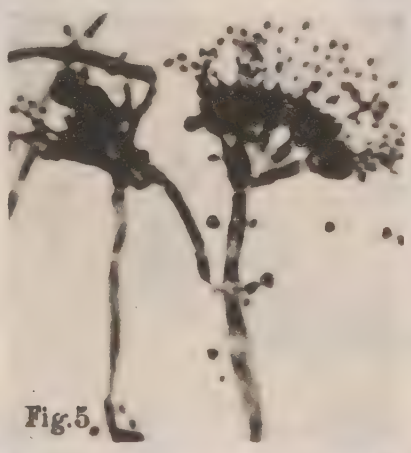

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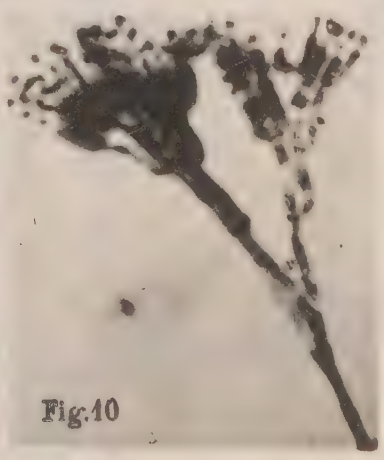

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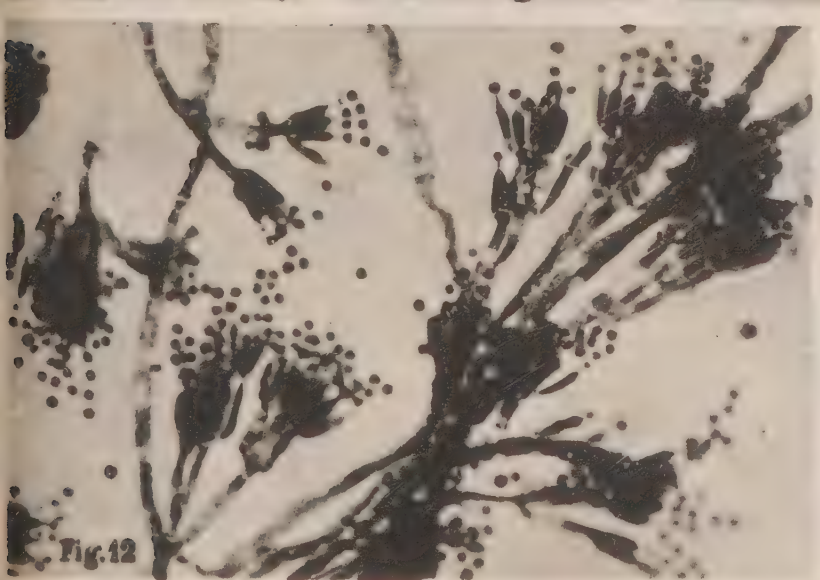

Fig.12

Fig.13

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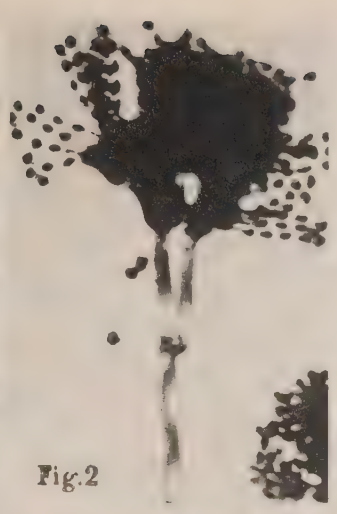
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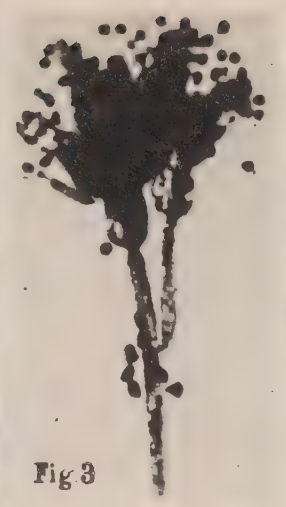
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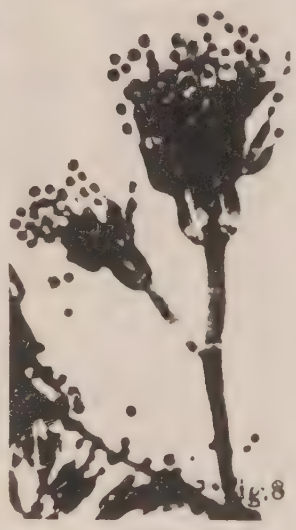
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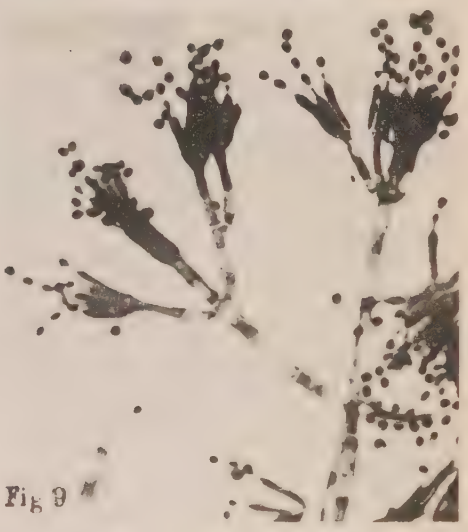
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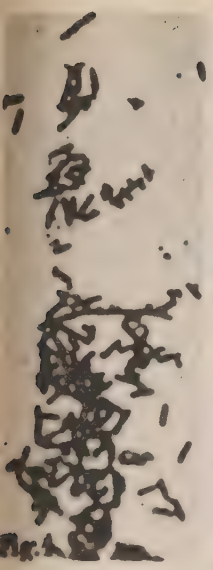
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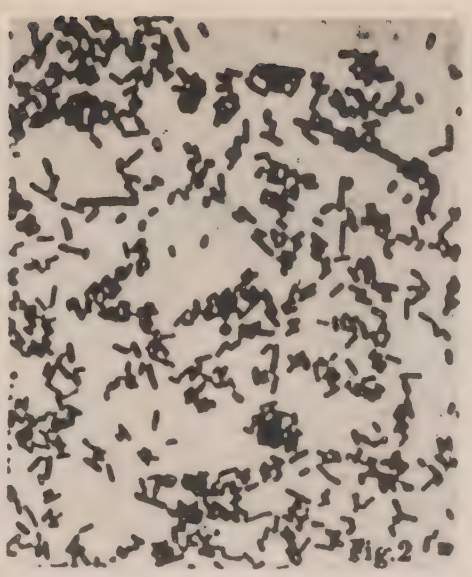
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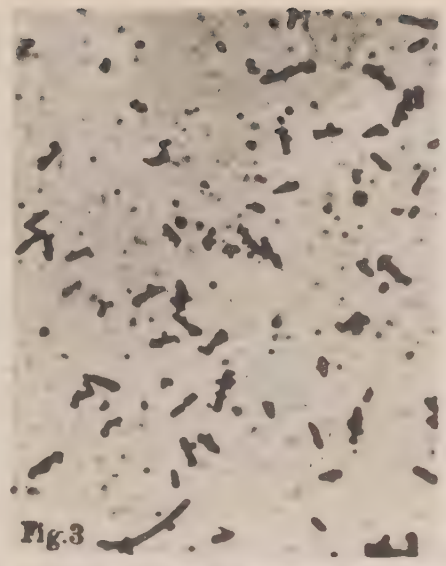
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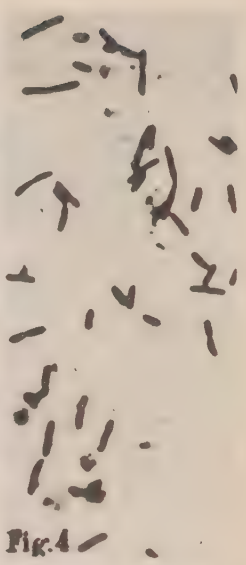
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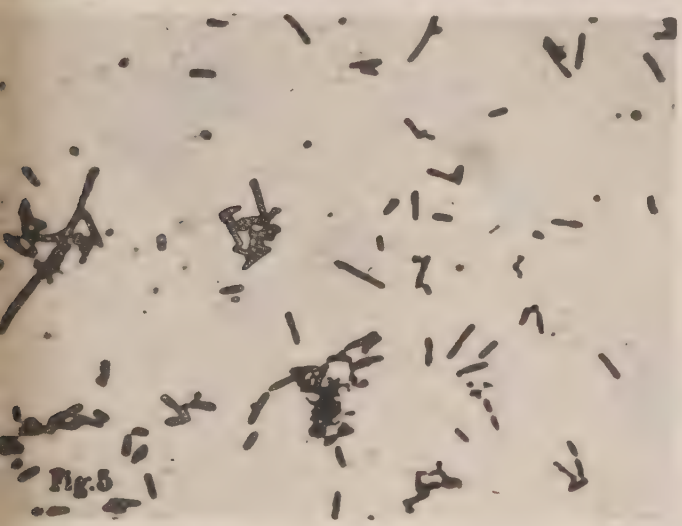
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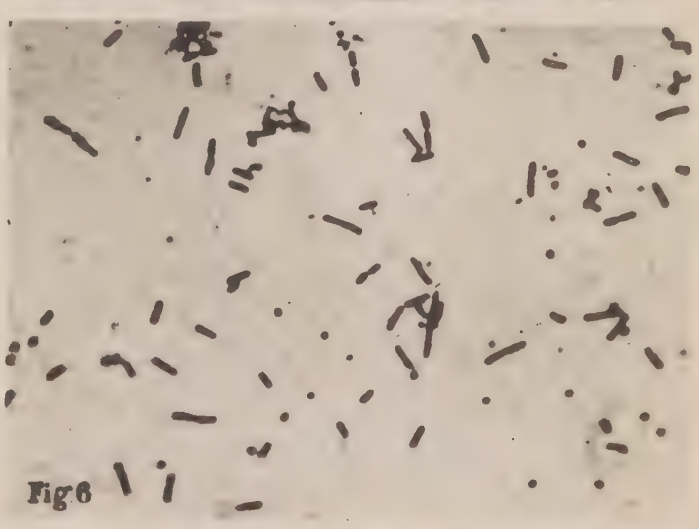
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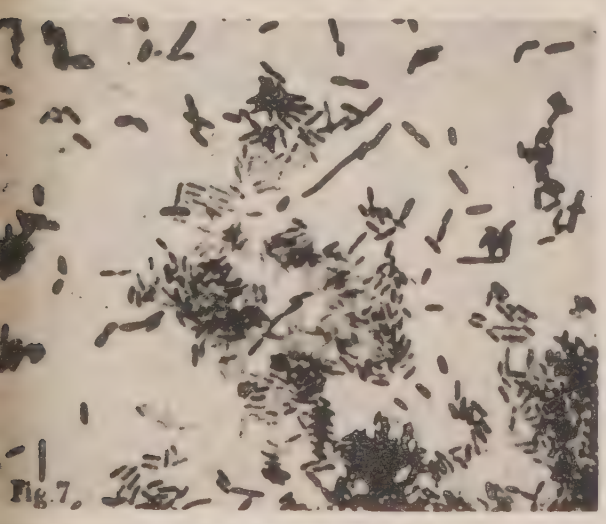
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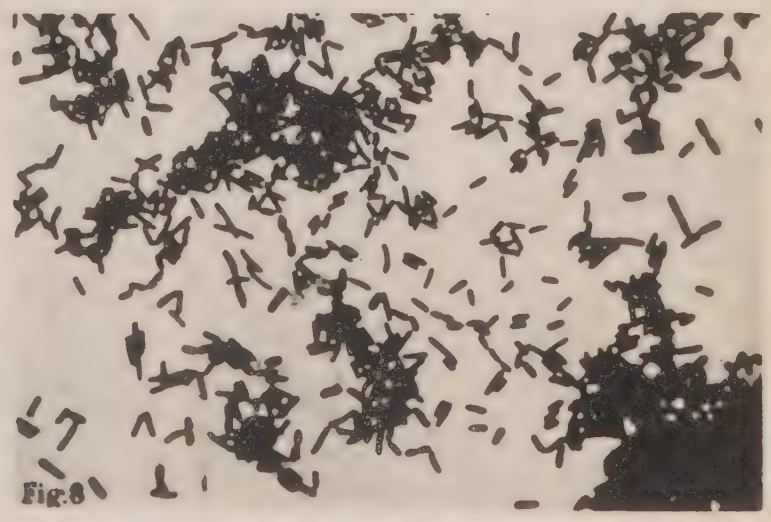
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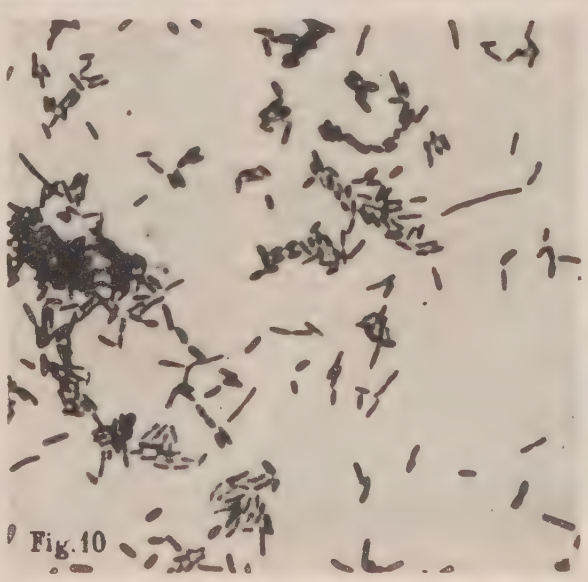
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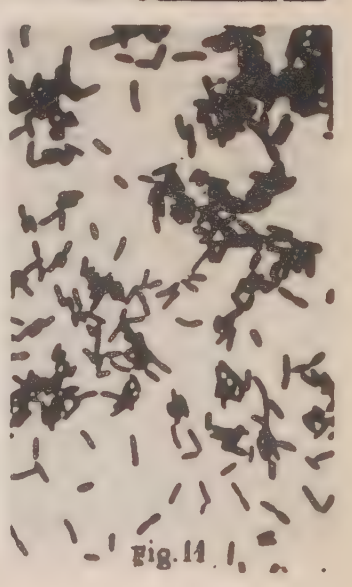
Fig.11

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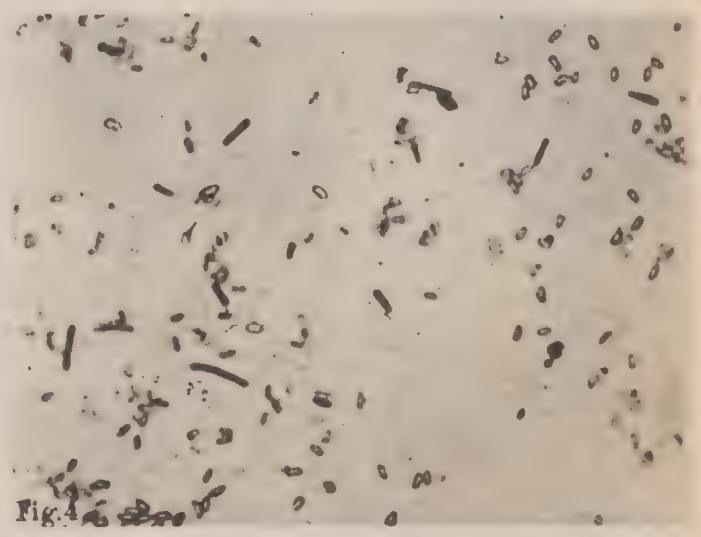
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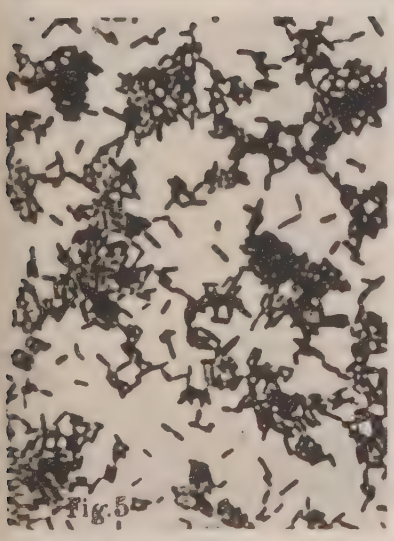
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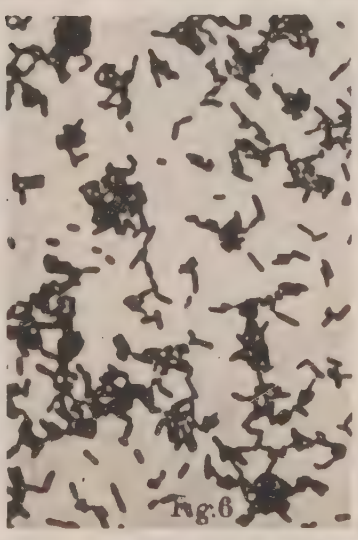
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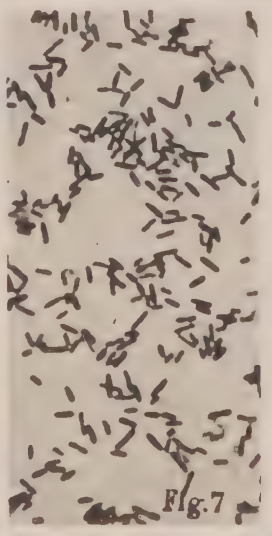
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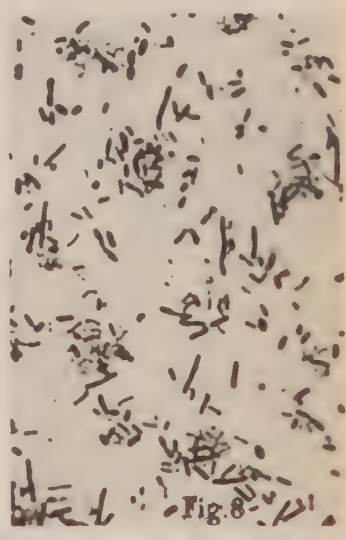
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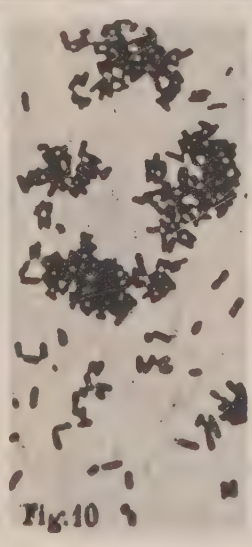
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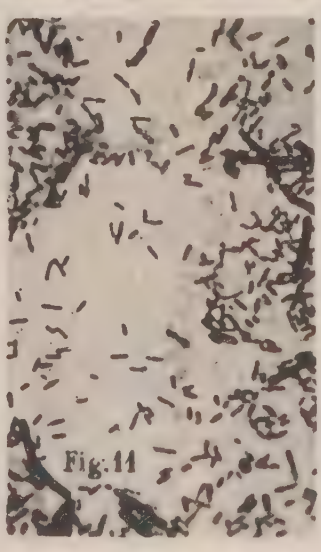
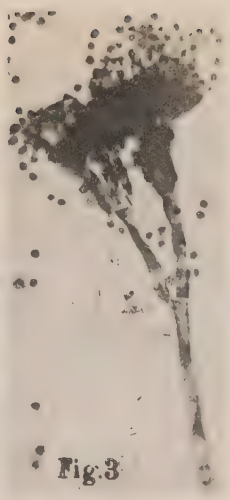


Fig.11

Fig.12

Fig.1

Fig.2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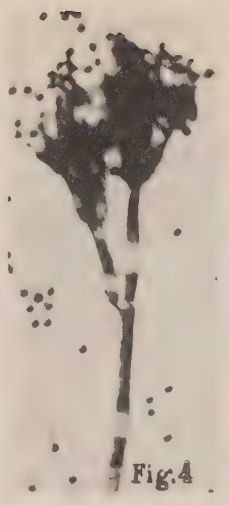
Fig.4

Fig.5

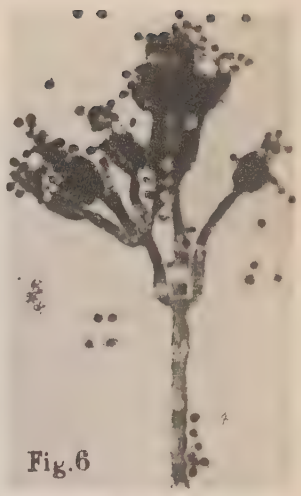
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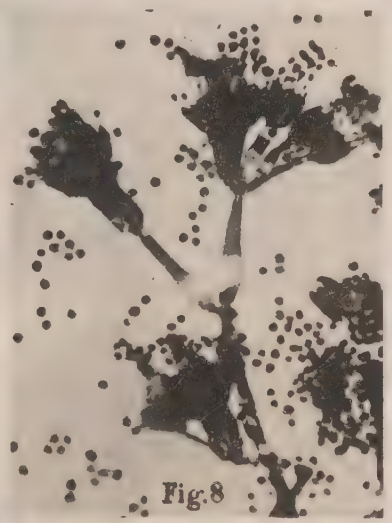
Fig.7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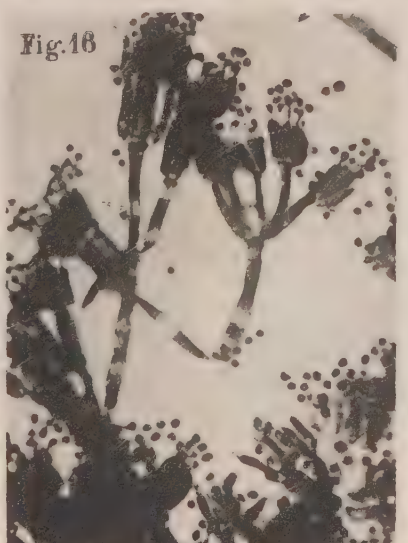
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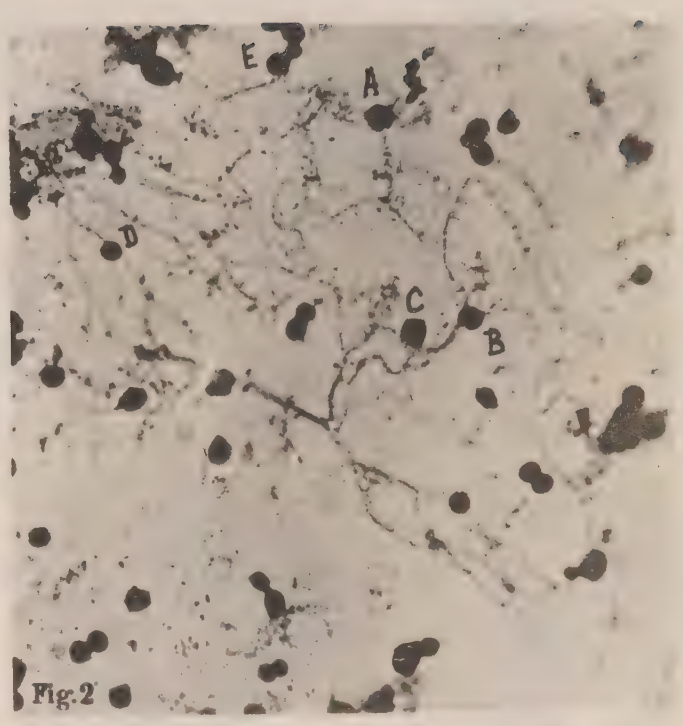
Fig.17

Fig.1



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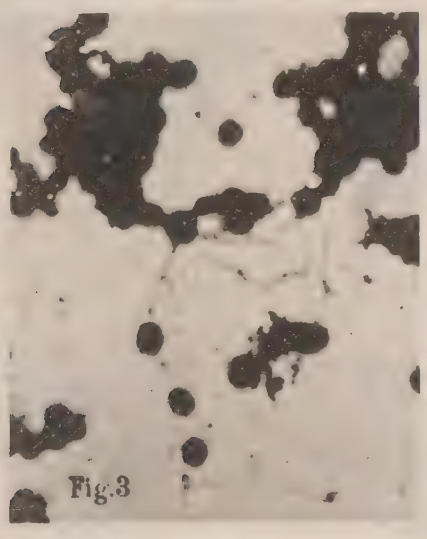

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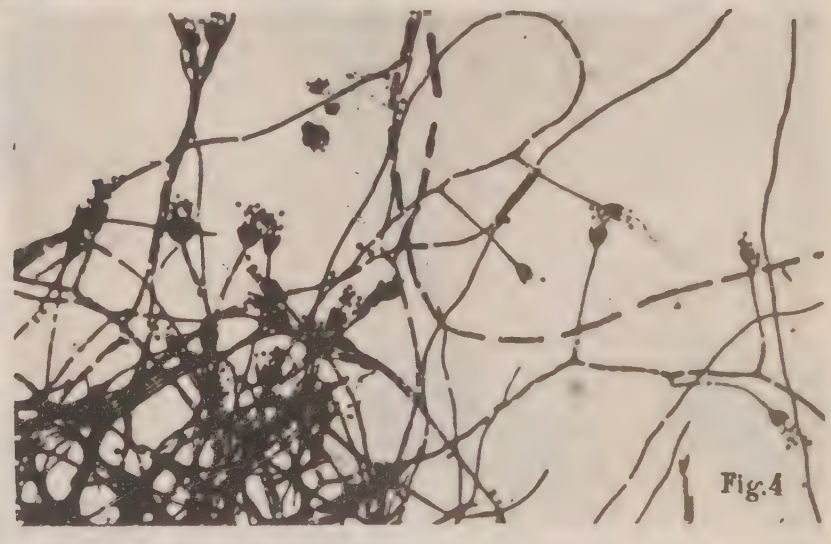

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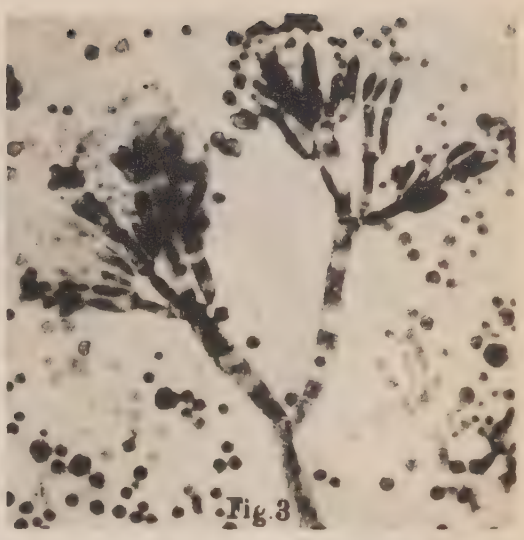

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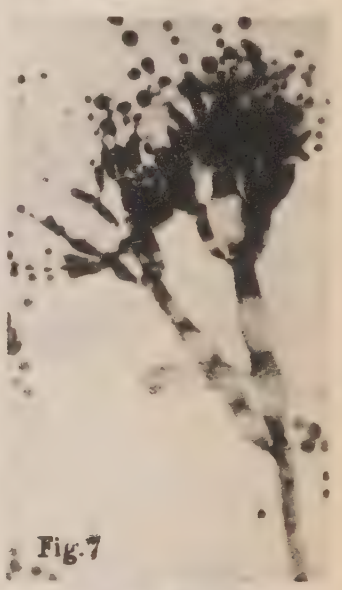

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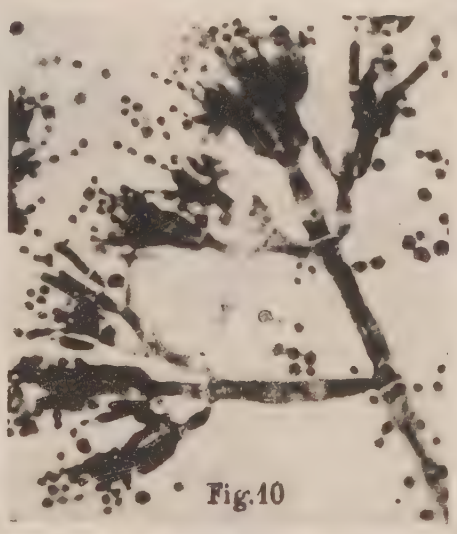

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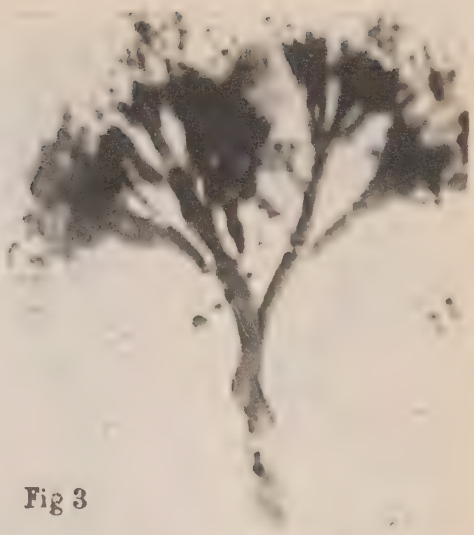

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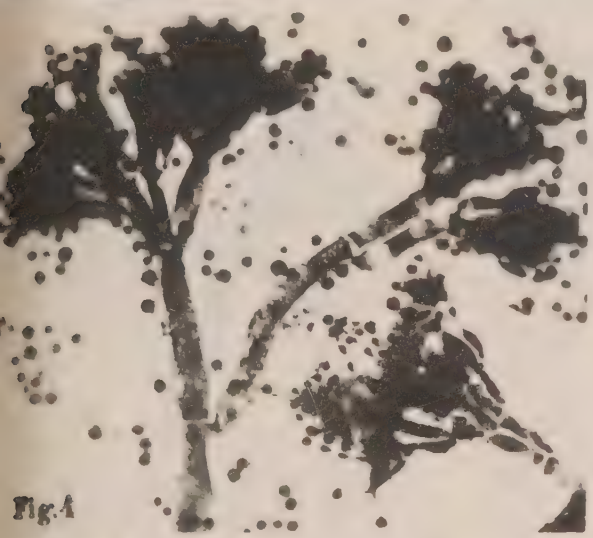

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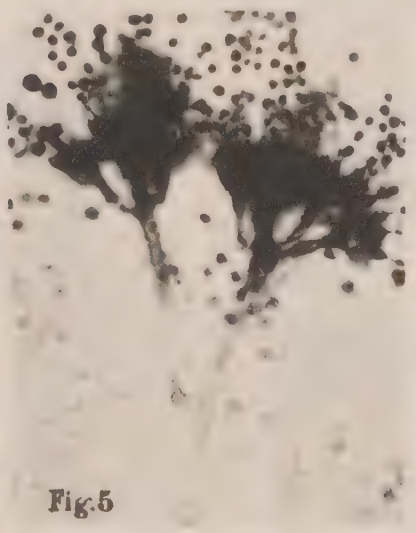

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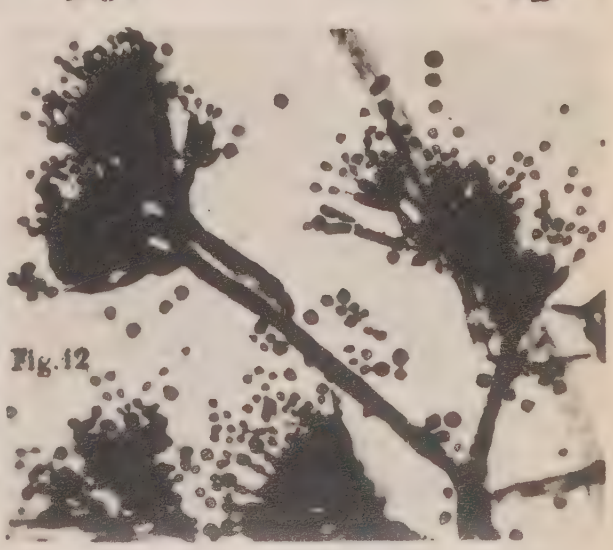

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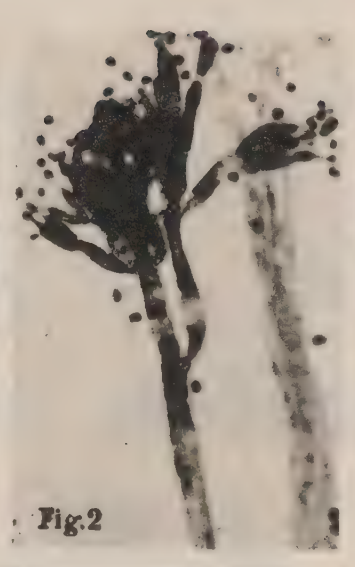
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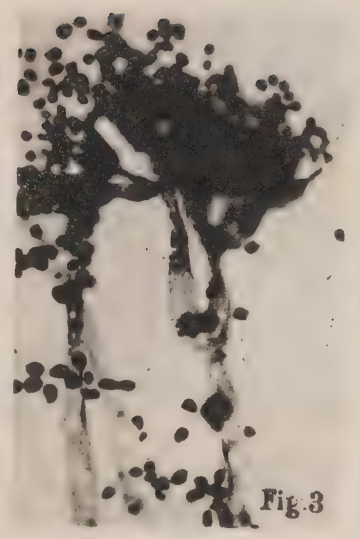
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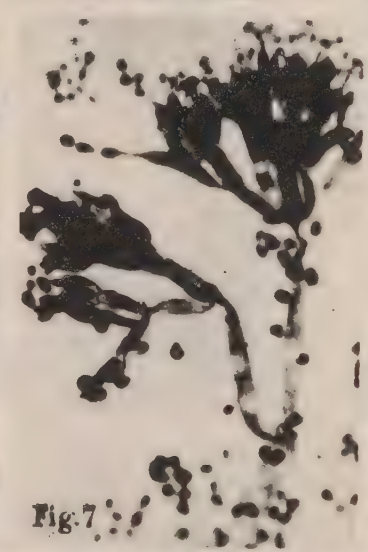
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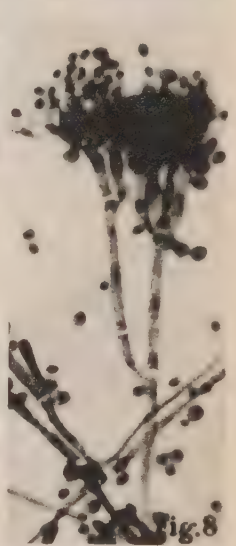
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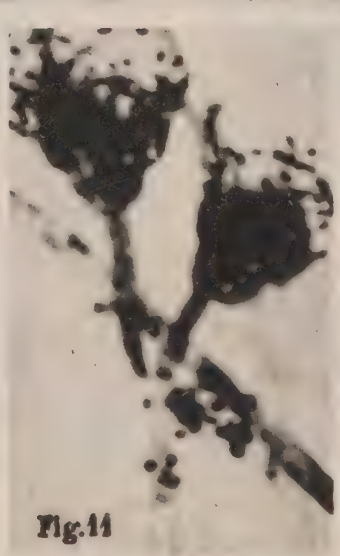
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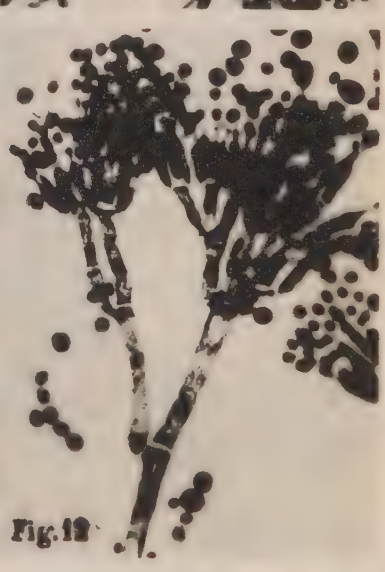
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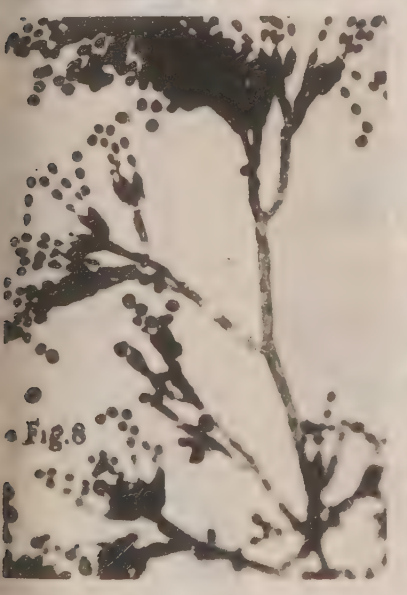
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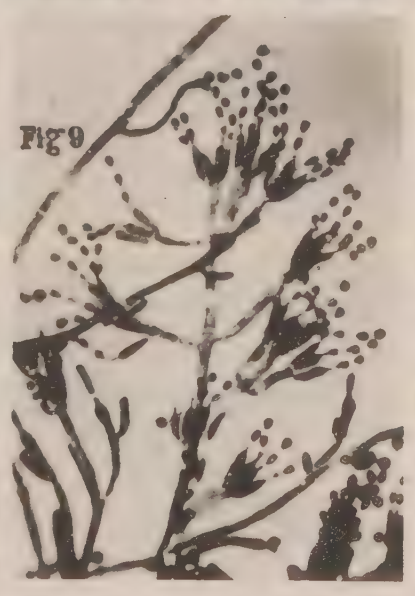
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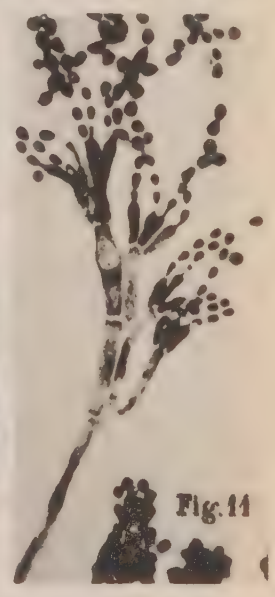
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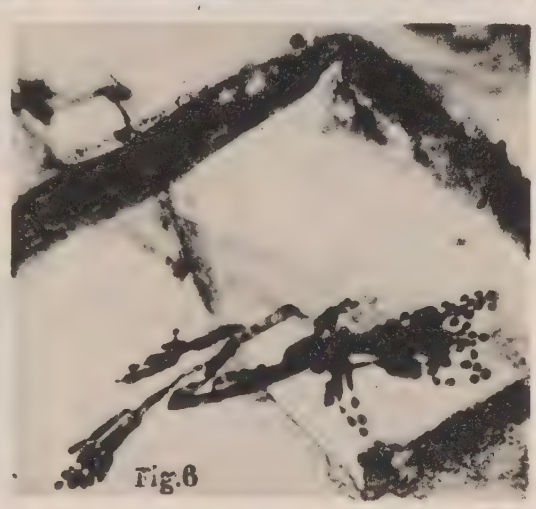
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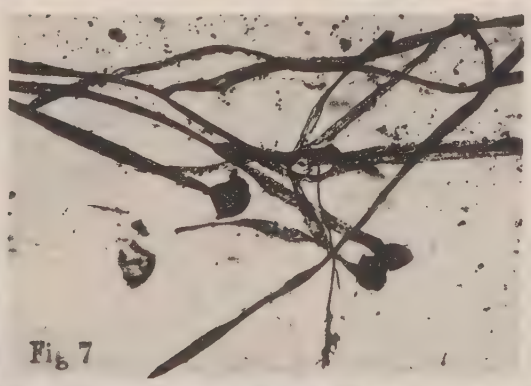
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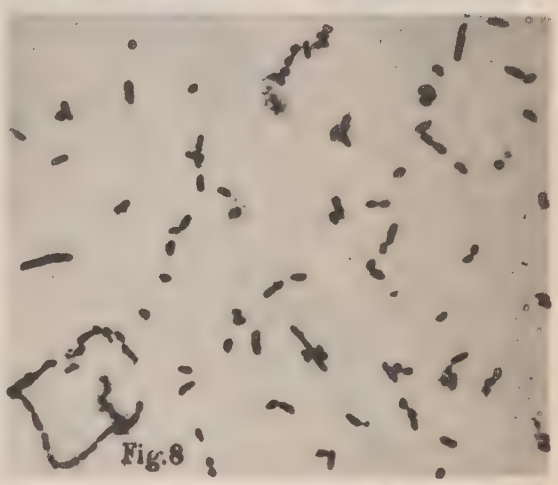
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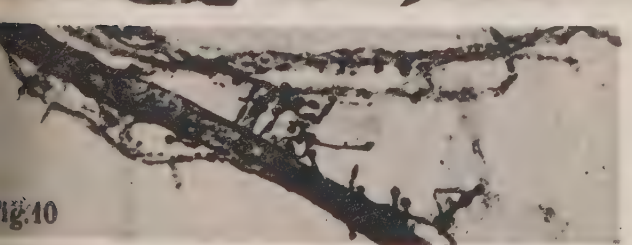
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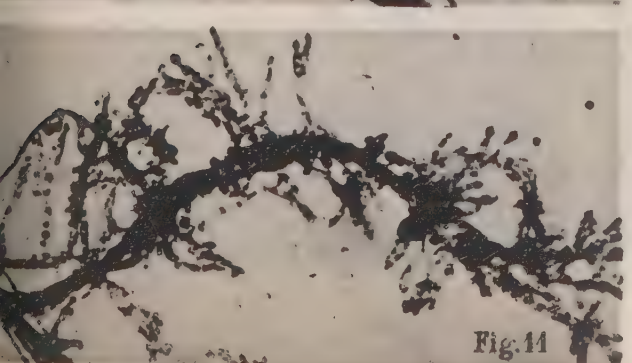
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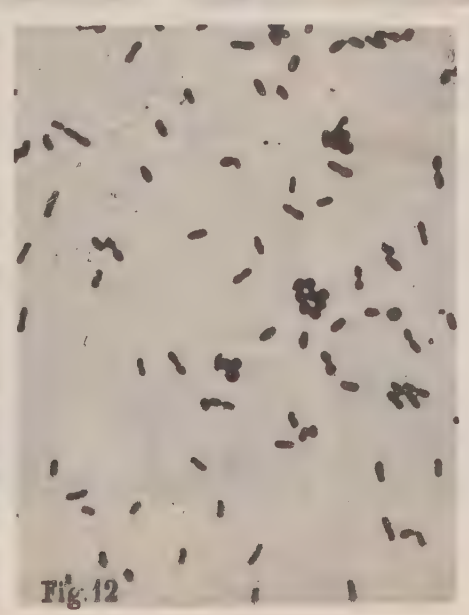
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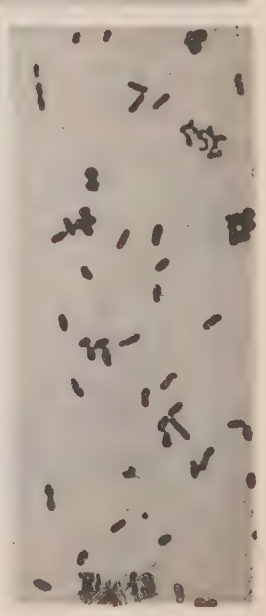
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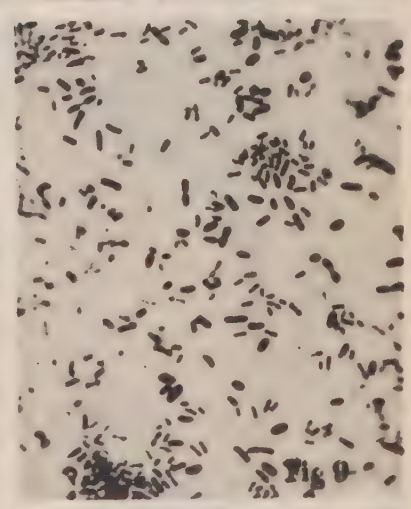

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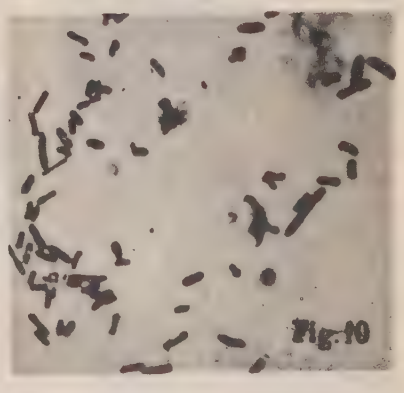

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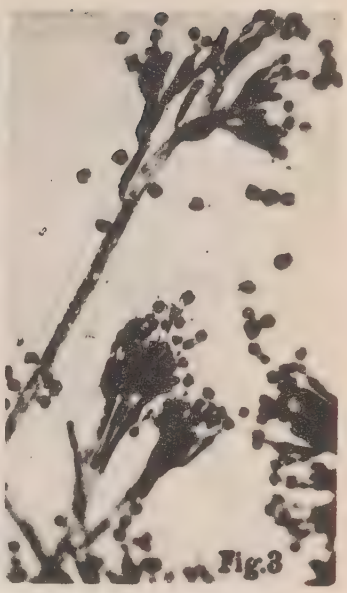

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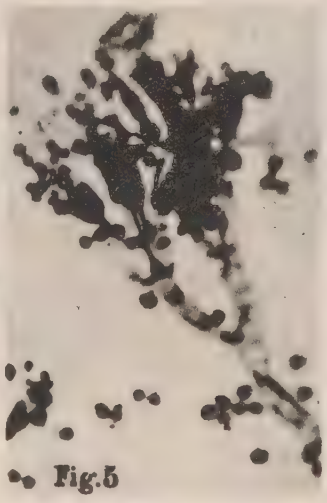

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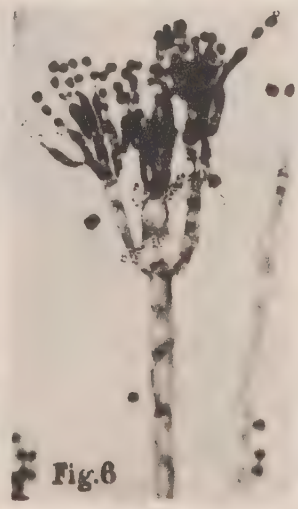

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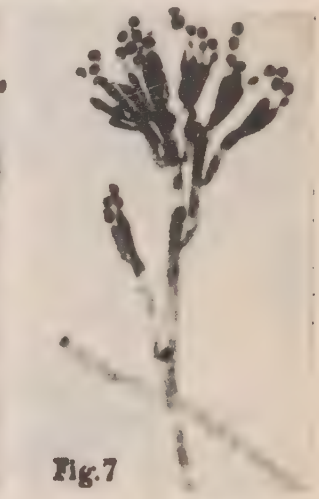

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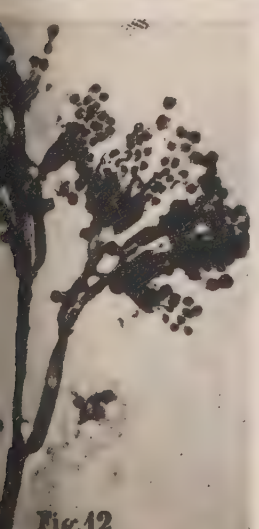

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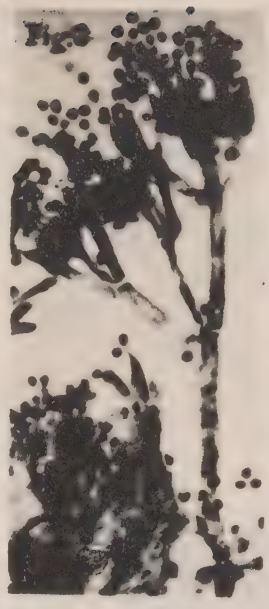

Fig.4

Fig 5

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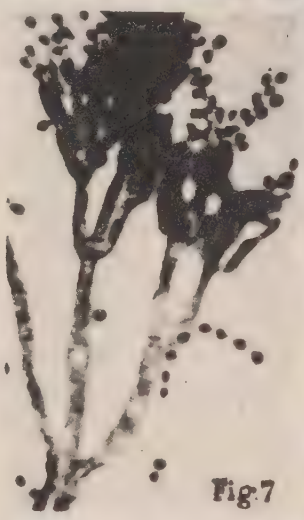

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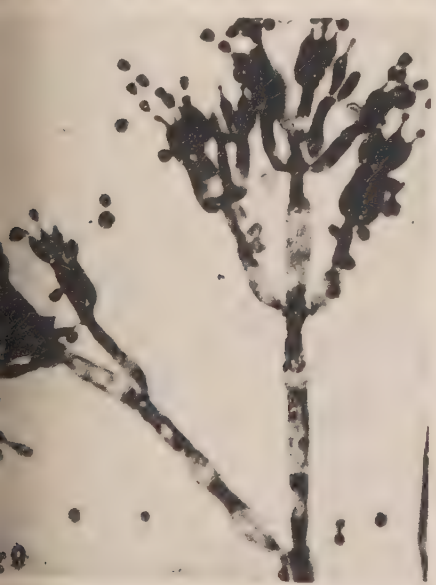

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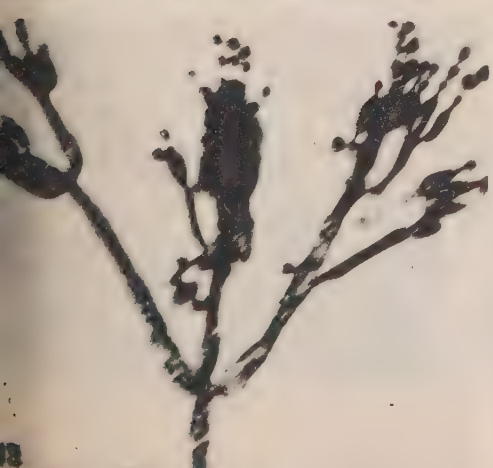

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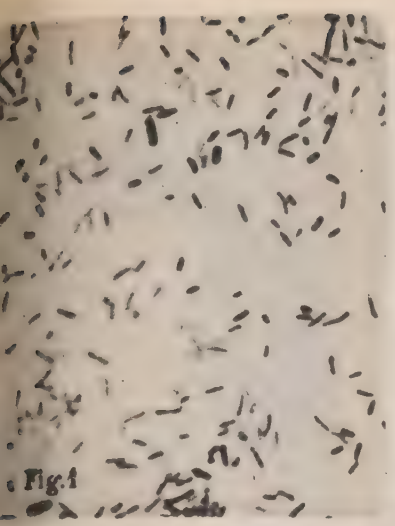

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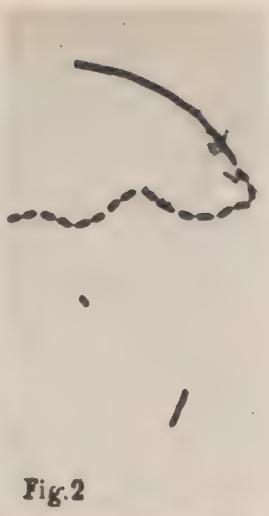

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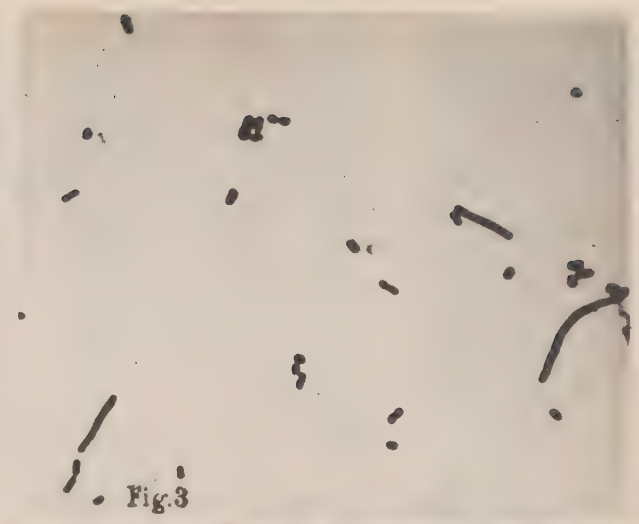

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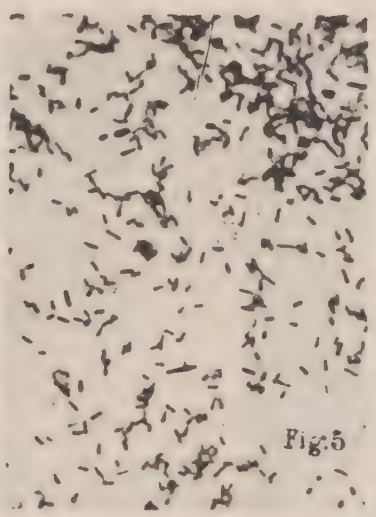

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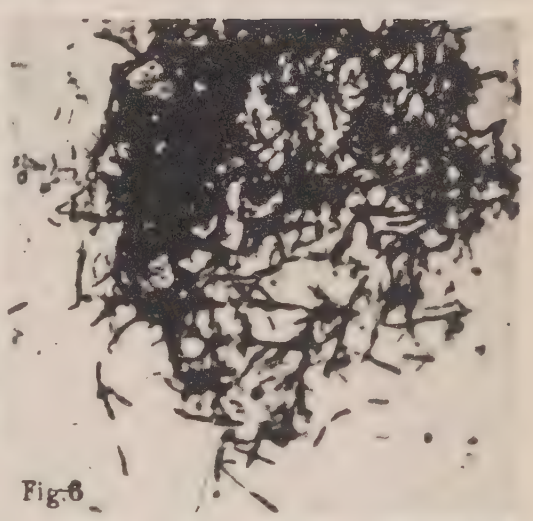

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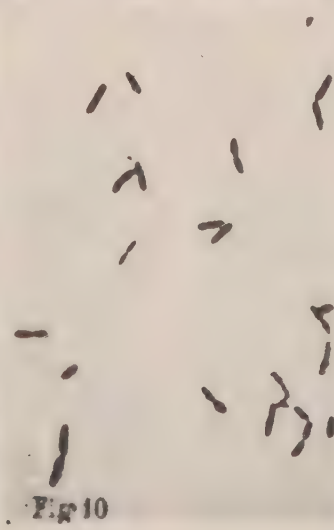

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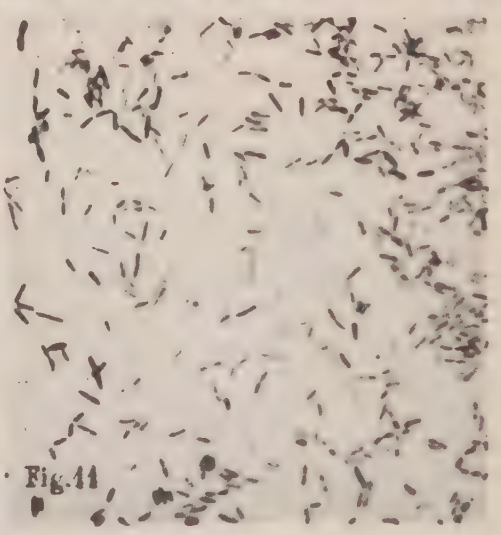

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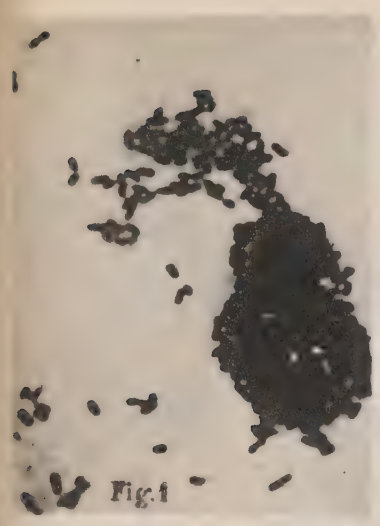
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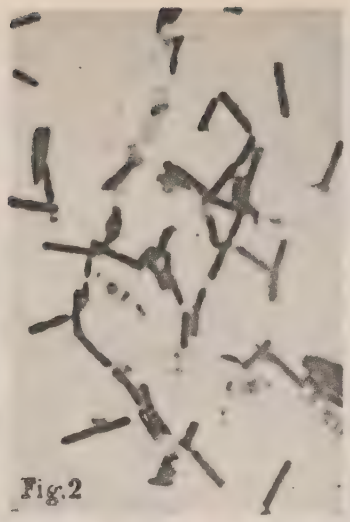
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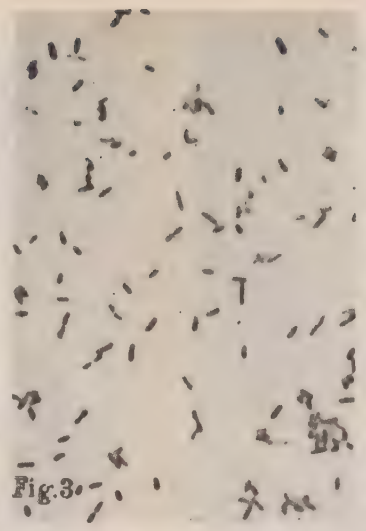
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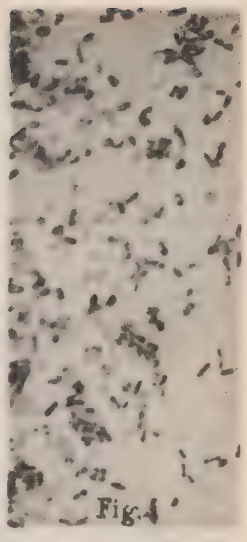
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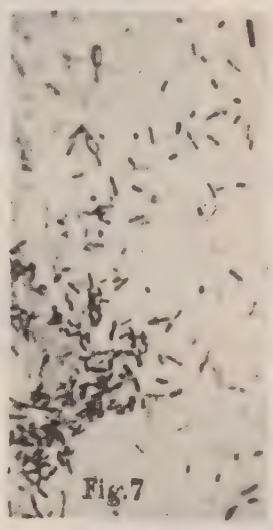
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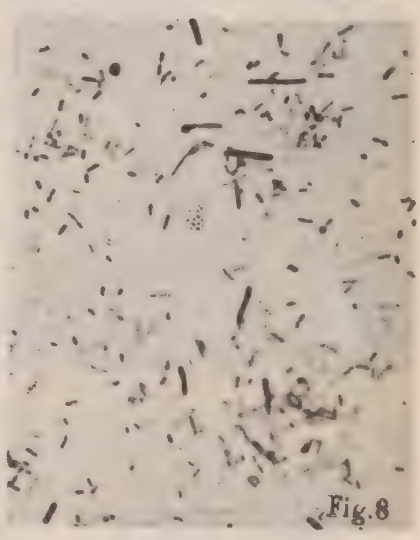
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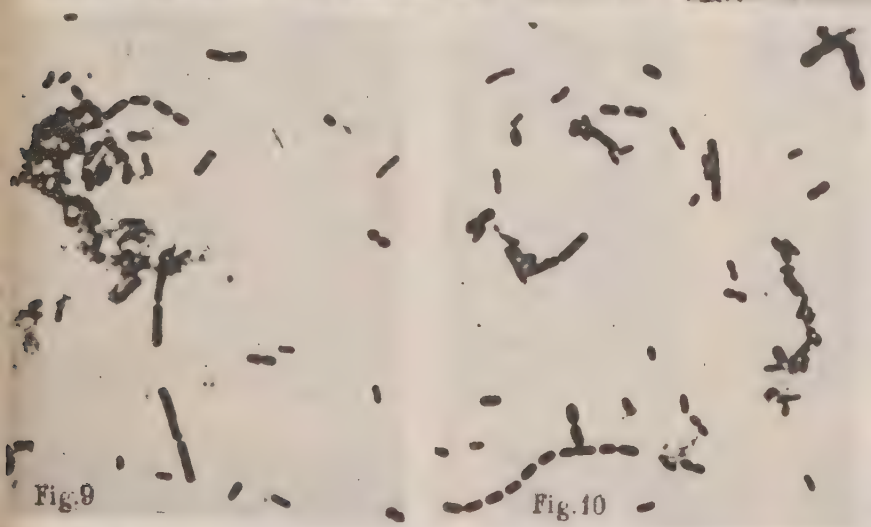
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Fig.10

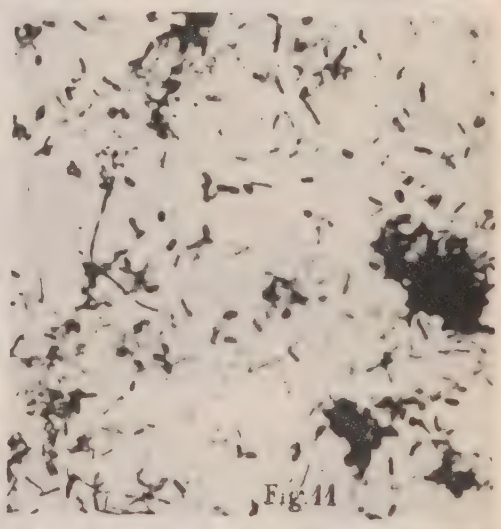
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Fig.12

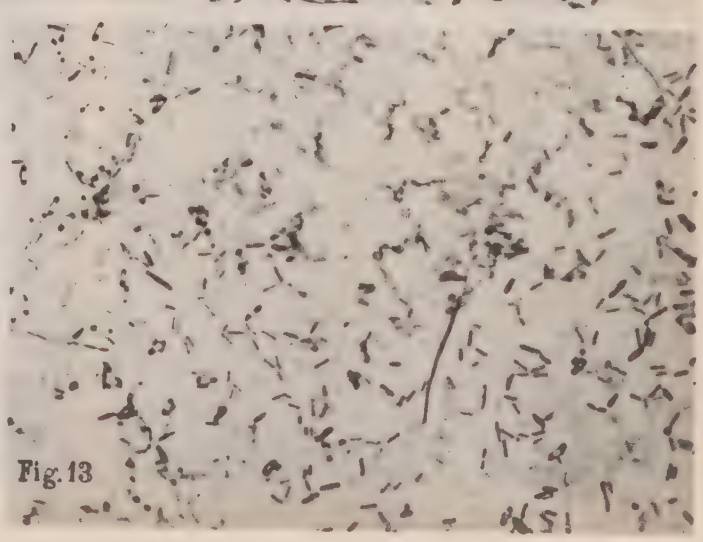
Fig.13

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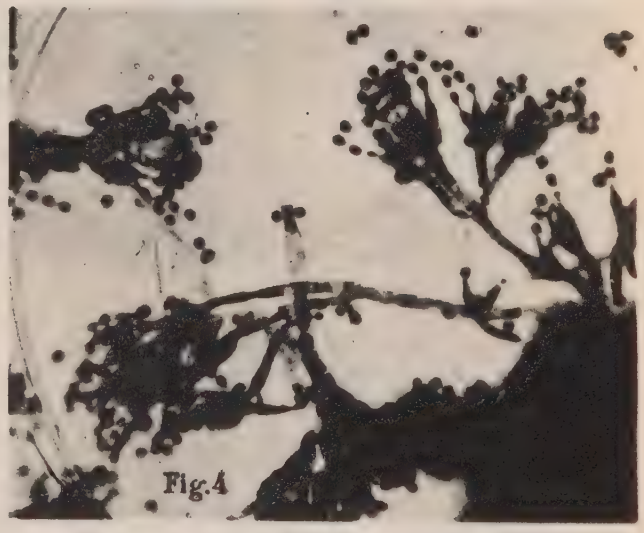

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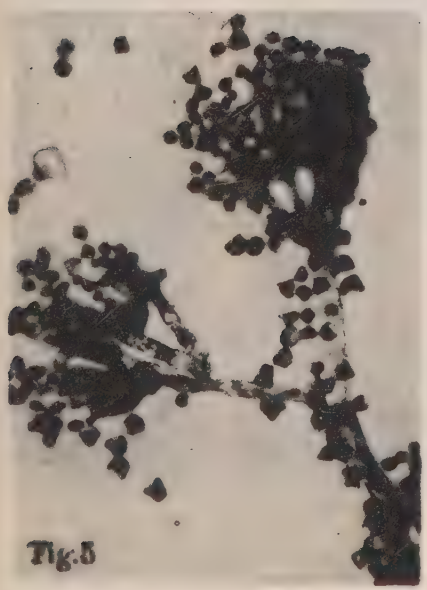

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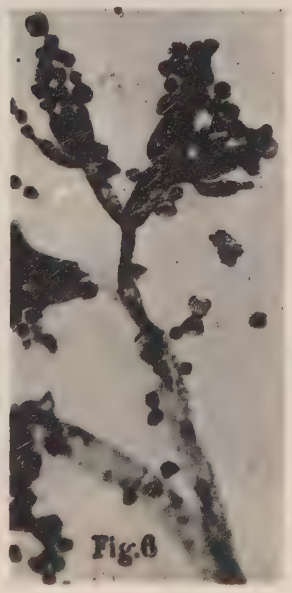

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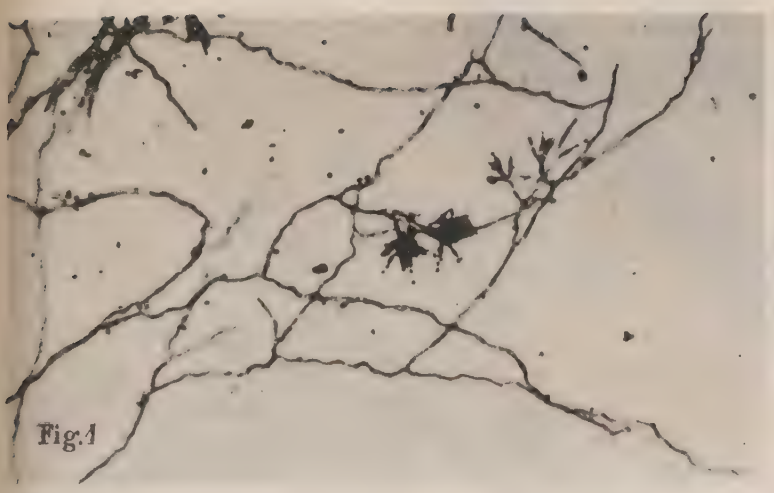
Fig.7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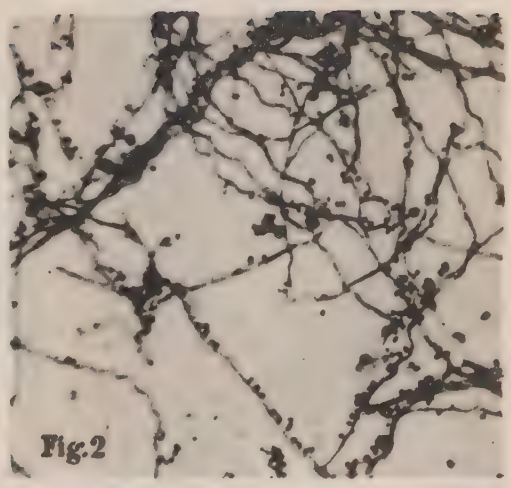
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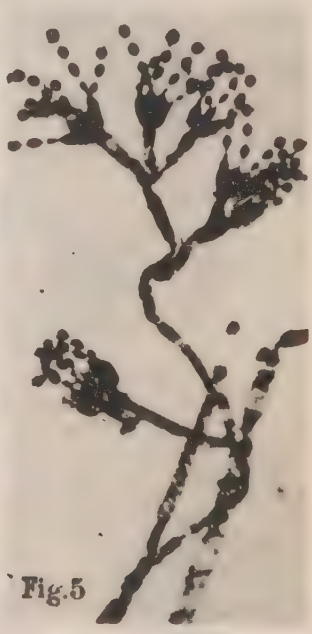
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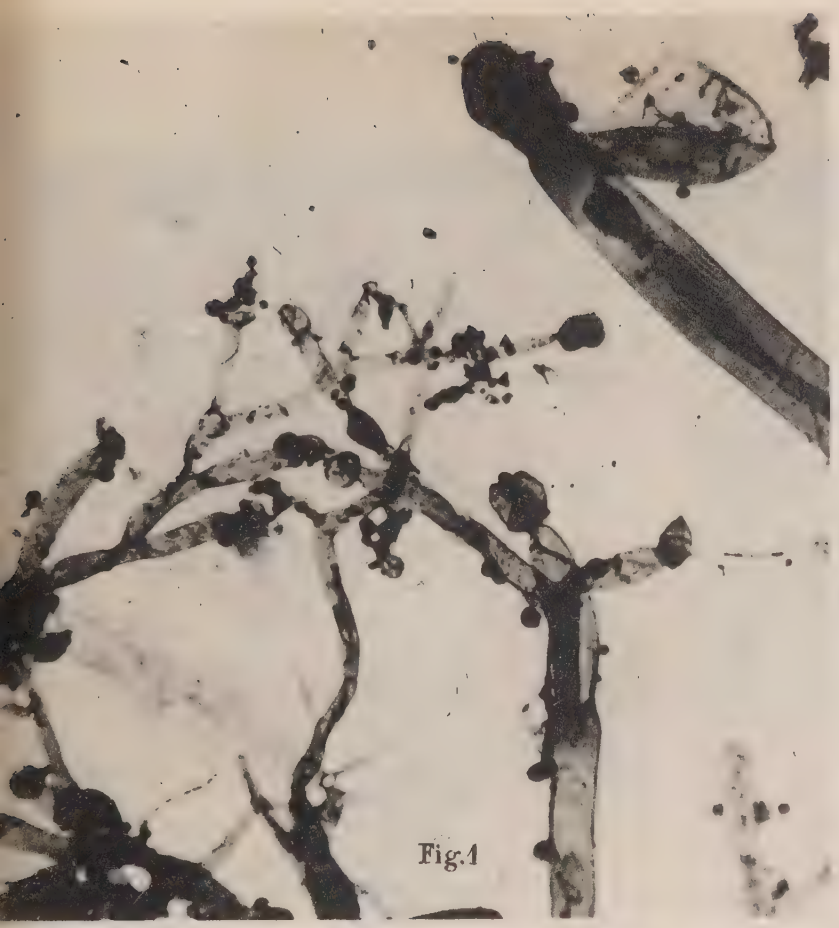

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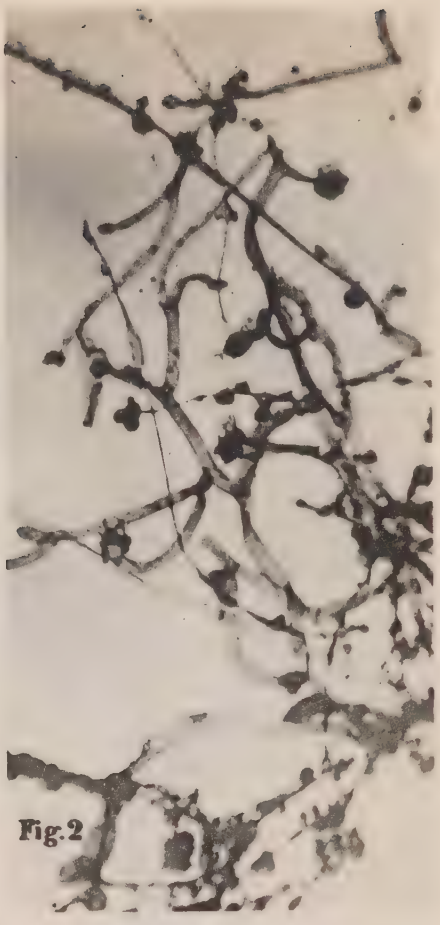

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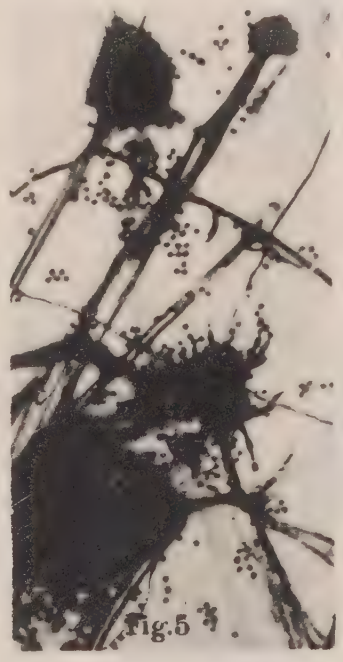

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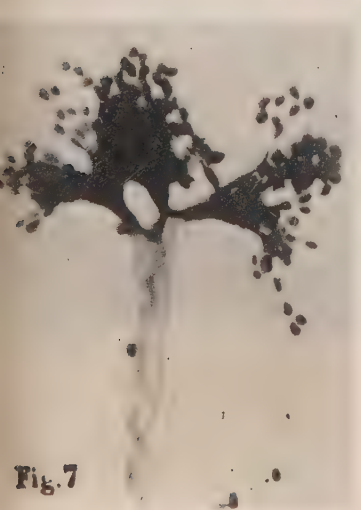

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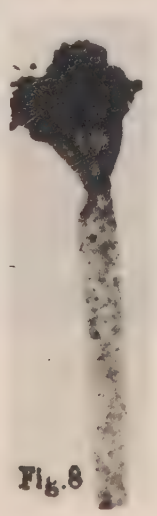

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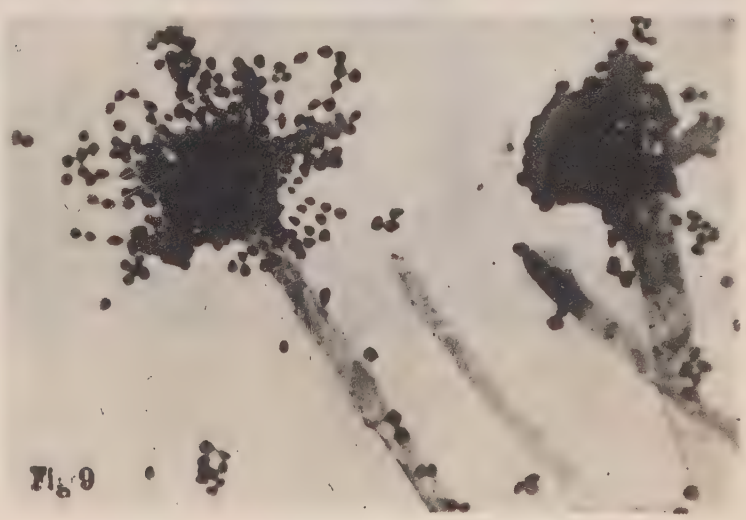

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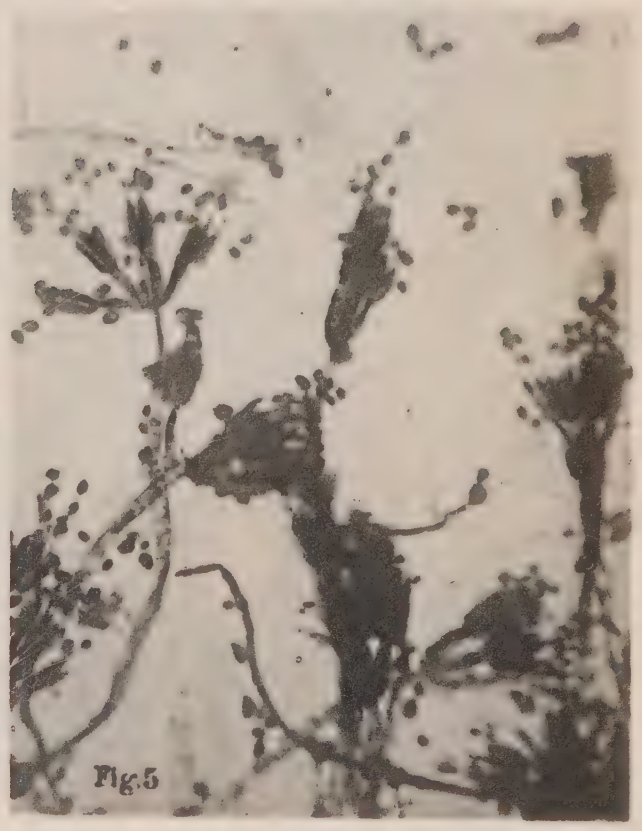

Fig.5

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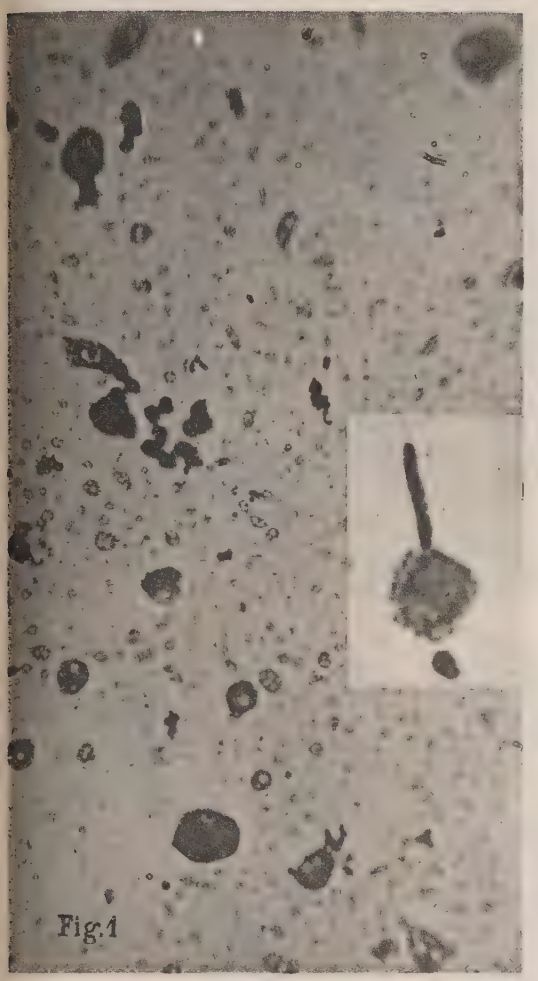

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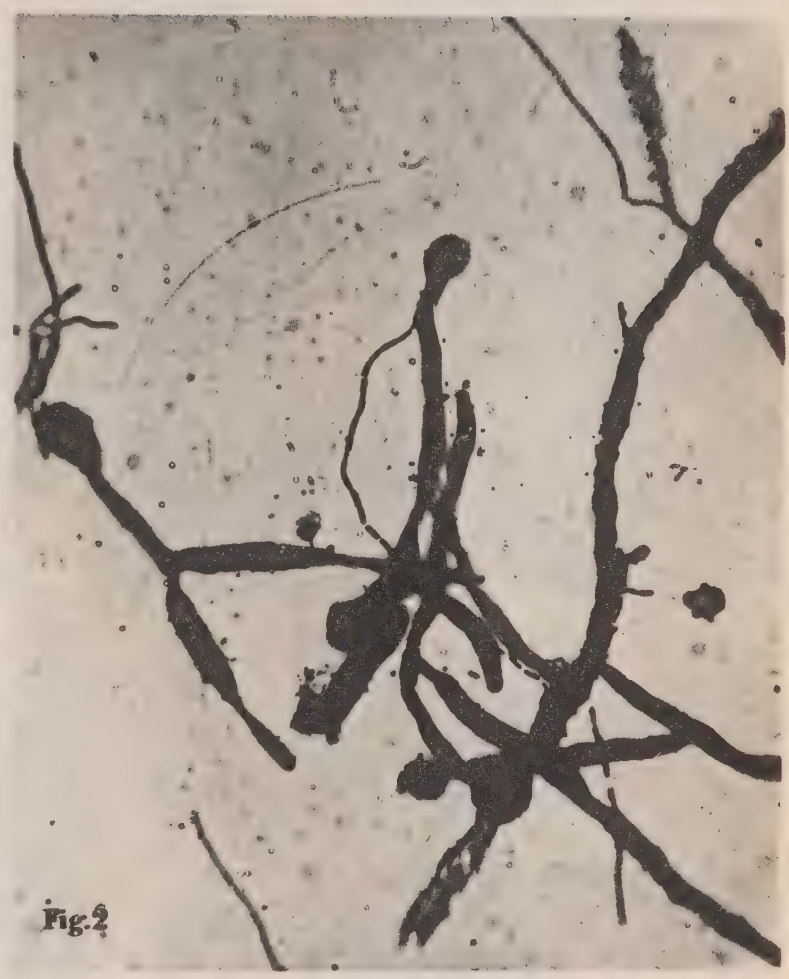

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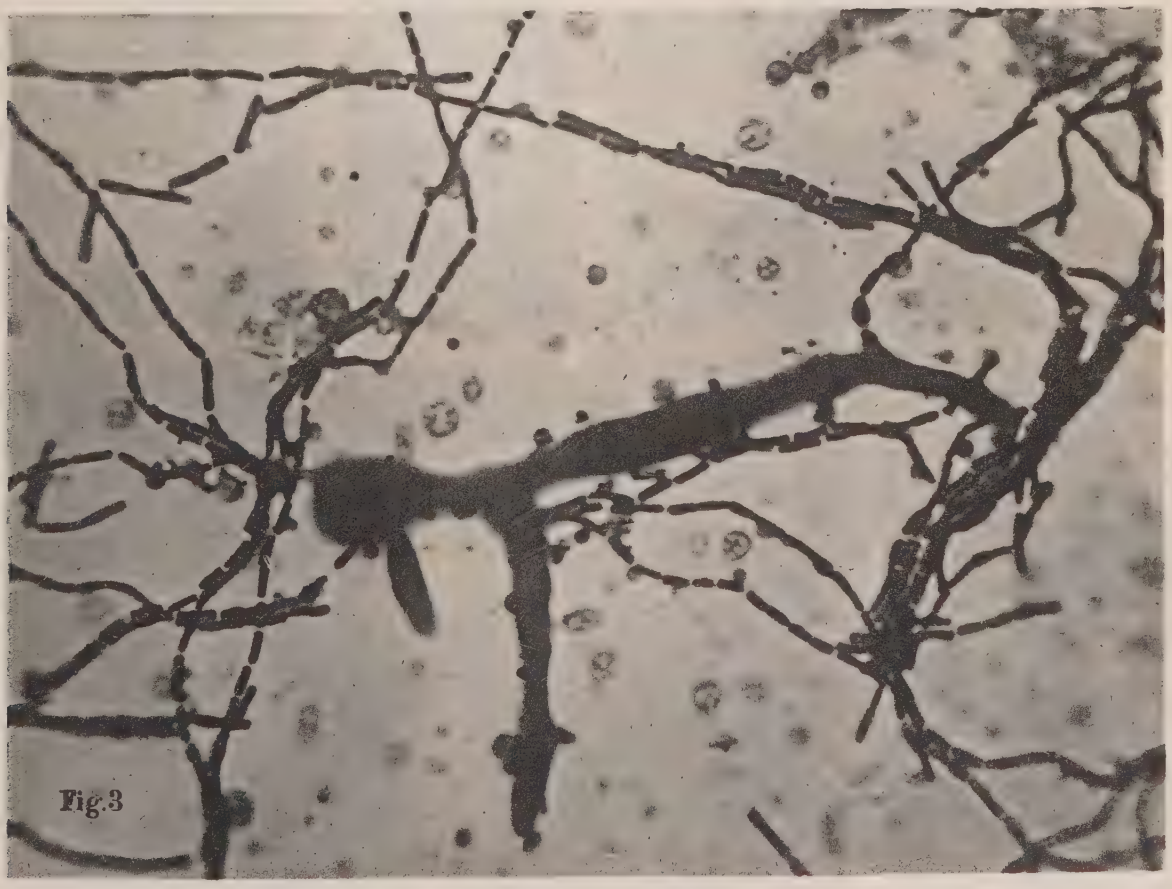

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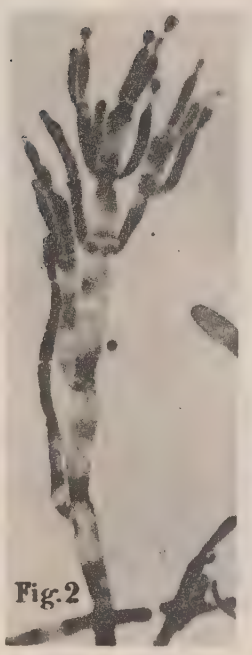
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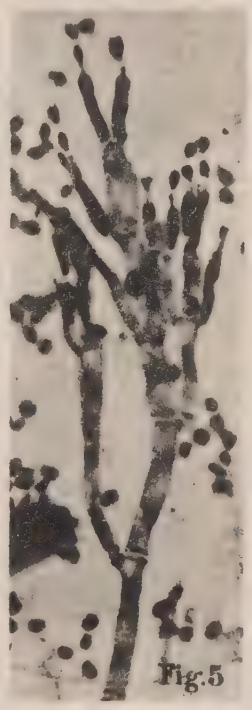
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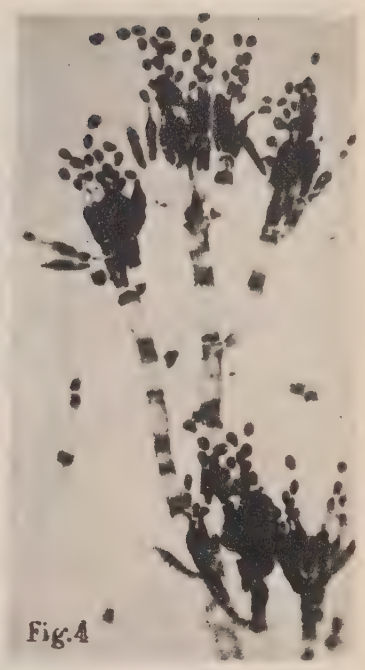

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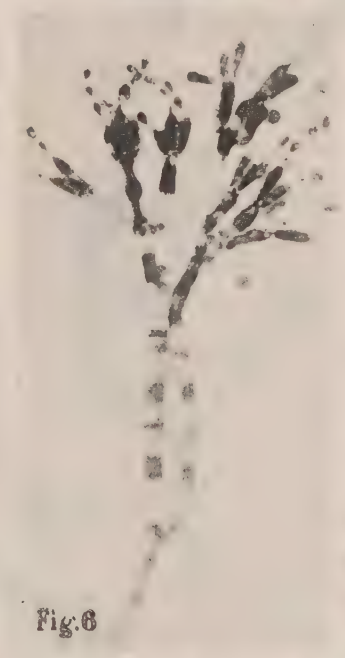

Fig.6

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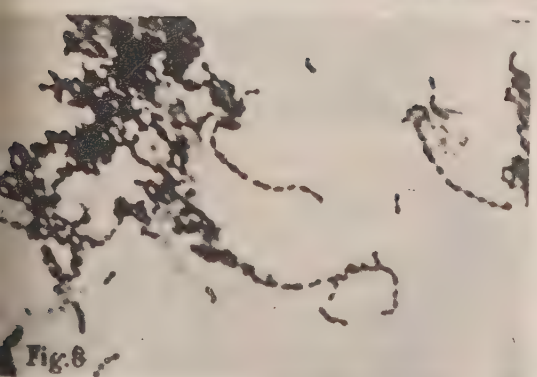

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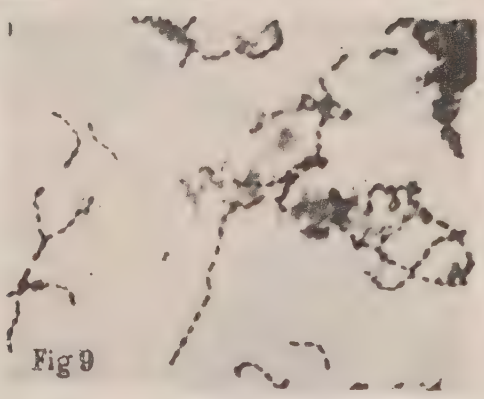

Fig 9

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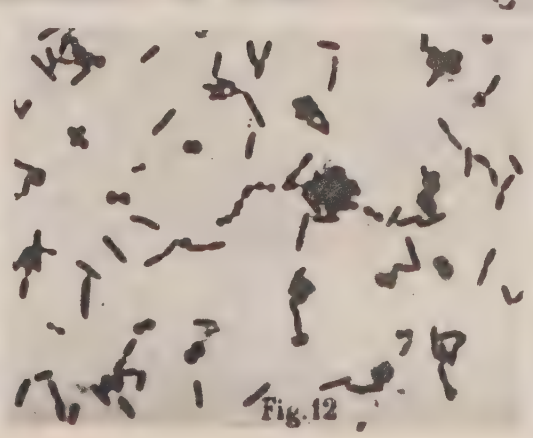

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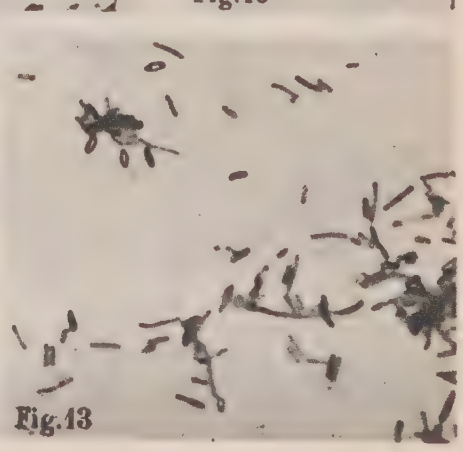

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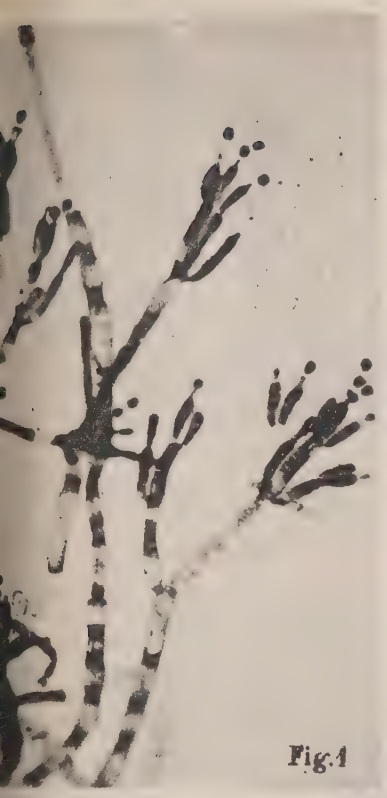

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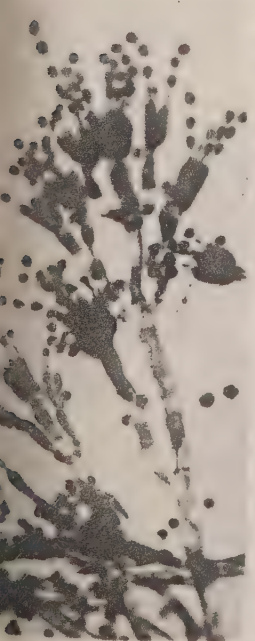

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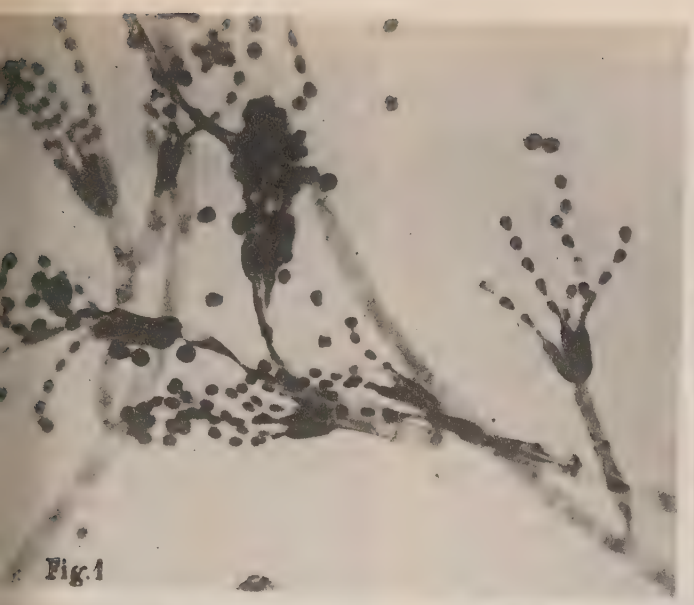

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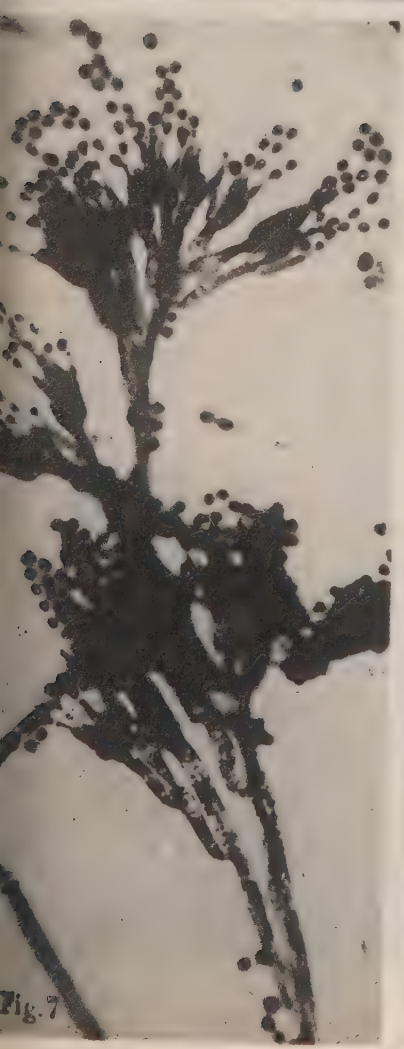

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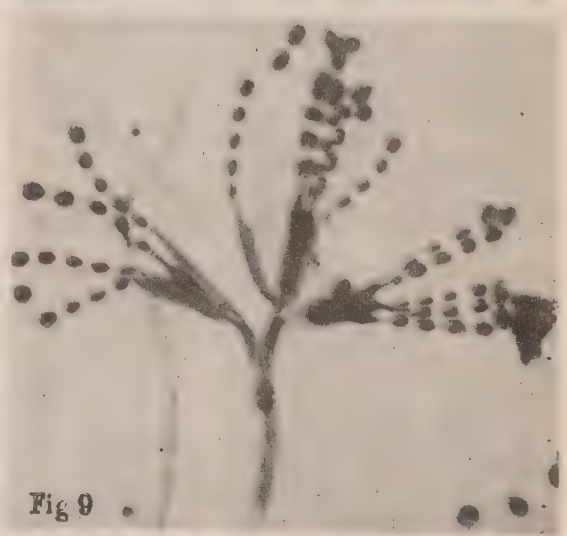

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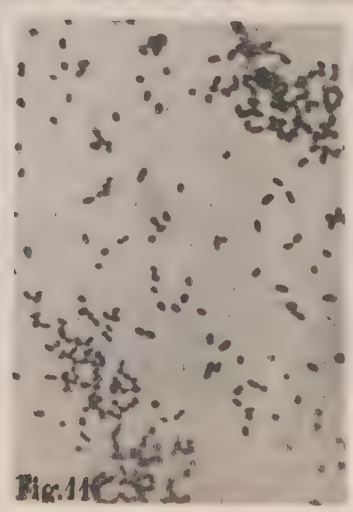

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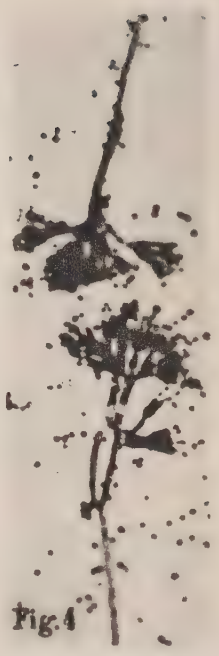

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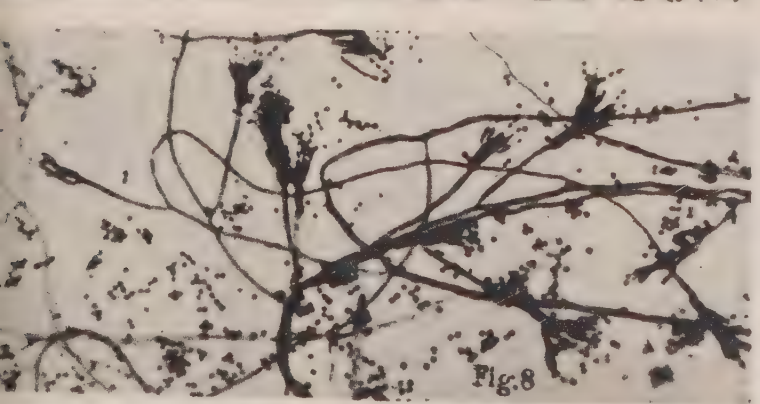
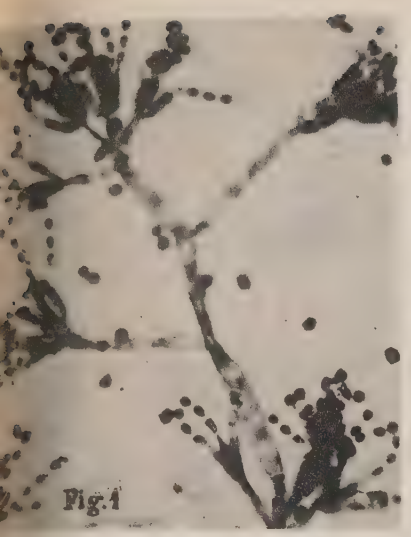


Fig.8

Fig. 9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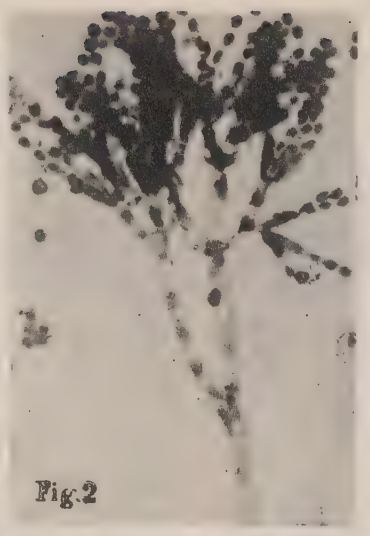
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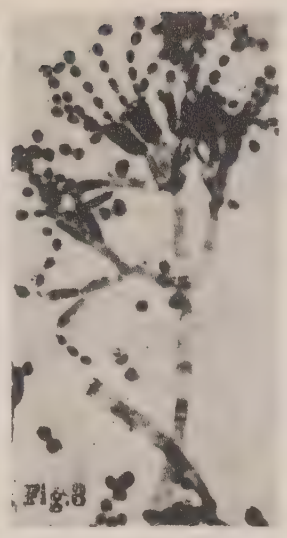
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Fig.4

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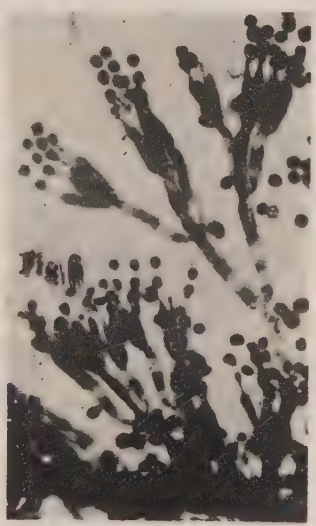
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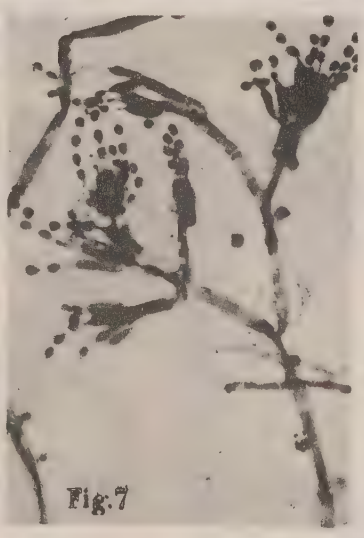
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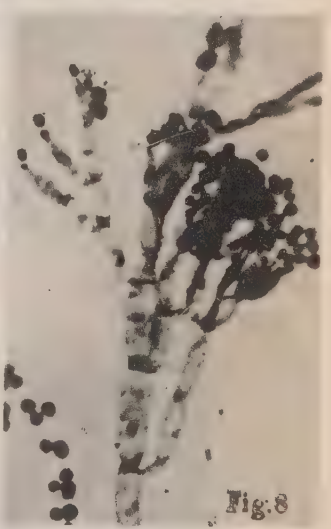
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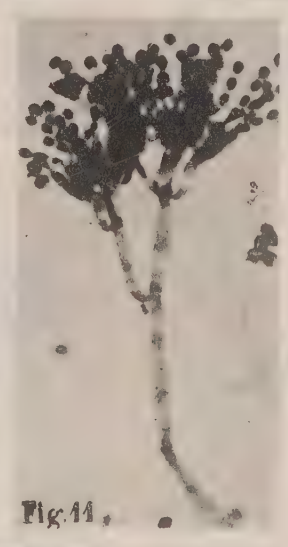
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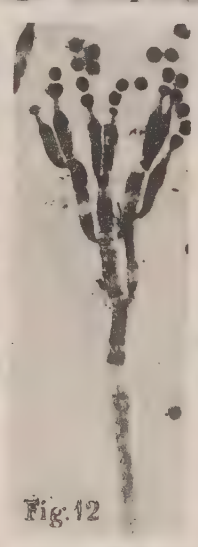
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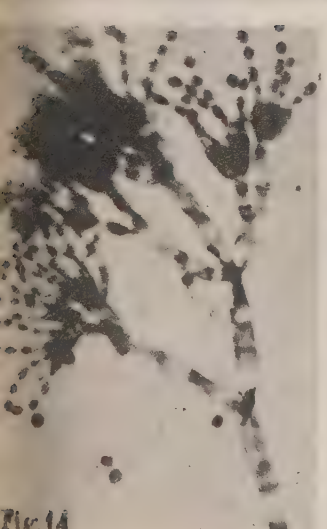
Fig.14

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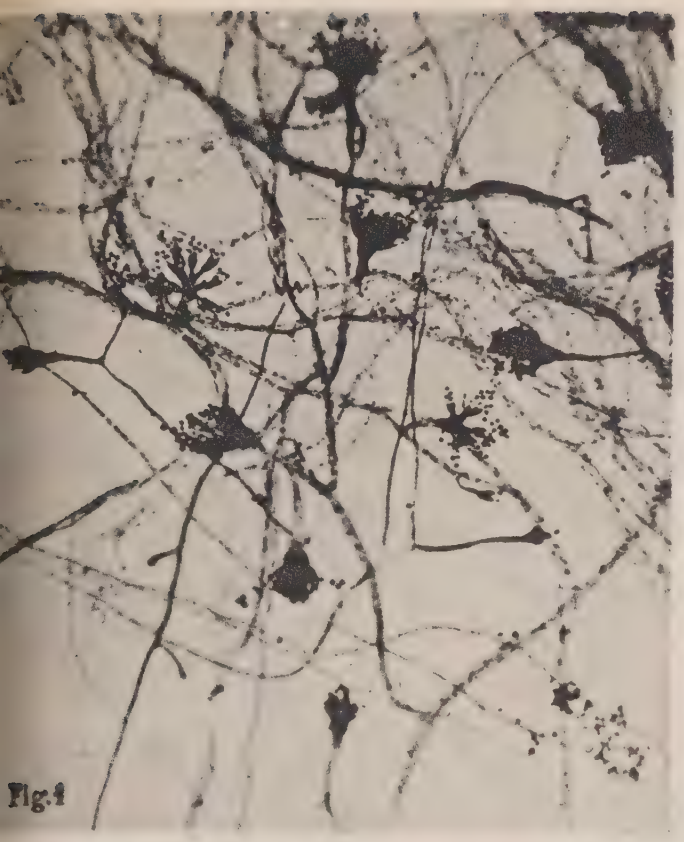

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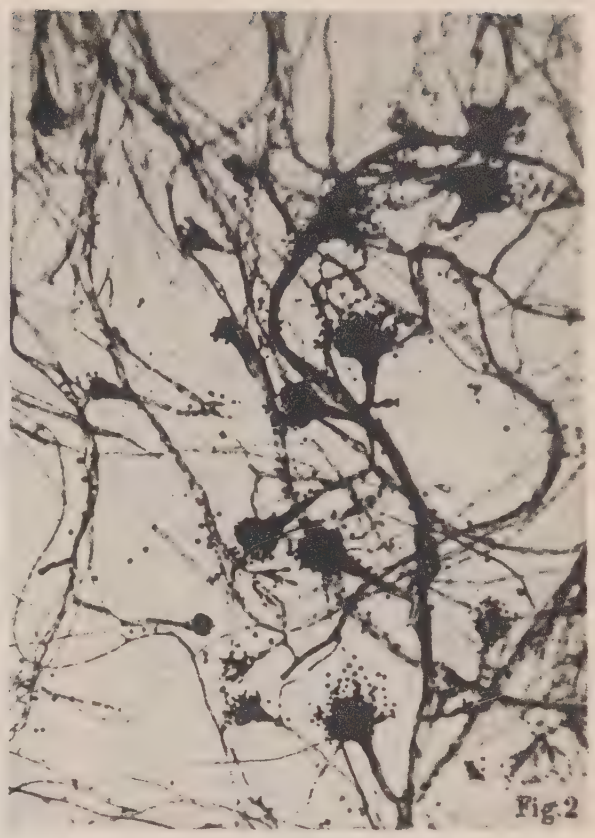

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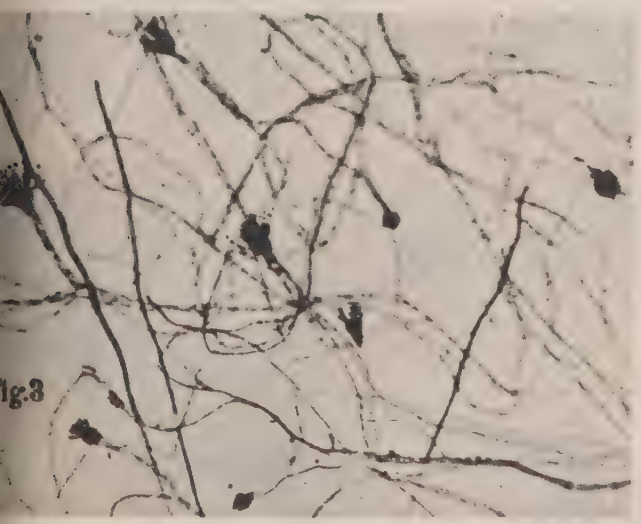

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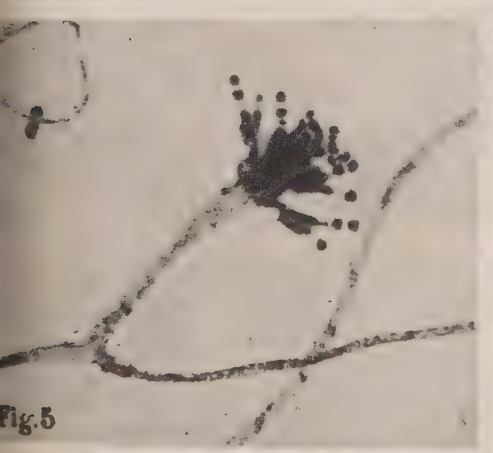

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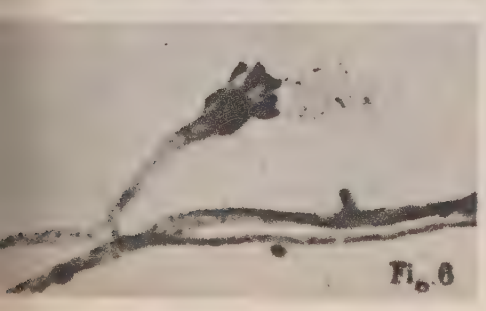

Fig.6

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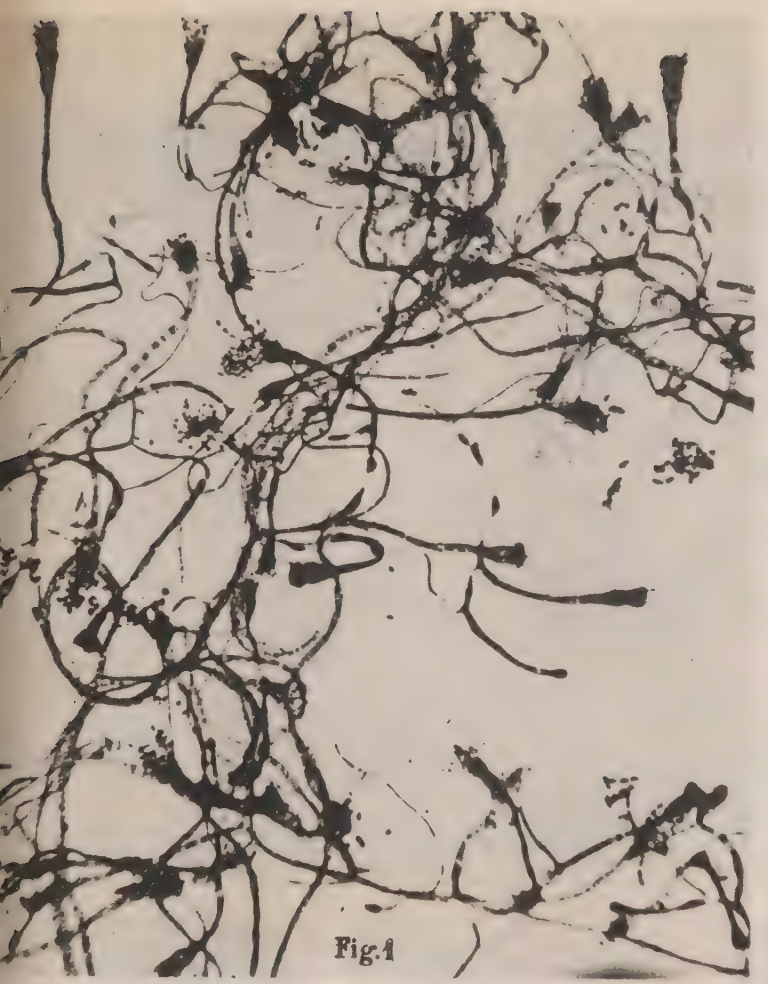

Fig.1

Fig.2

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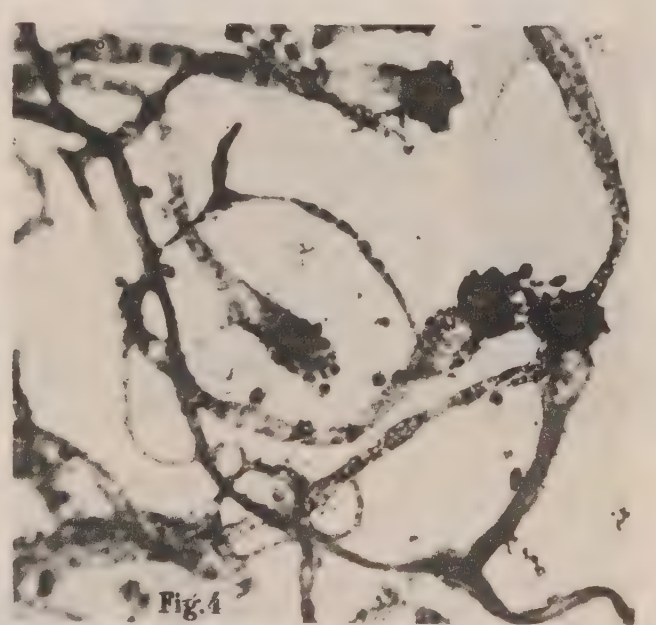
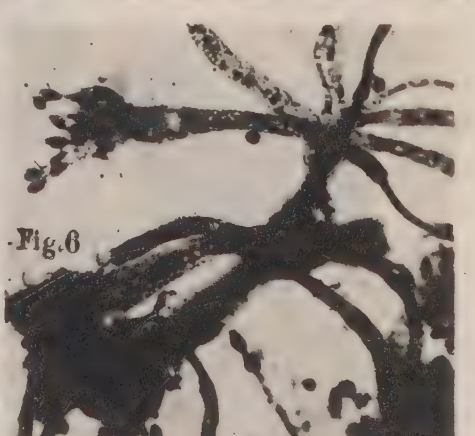


Fig.4

Fig.5



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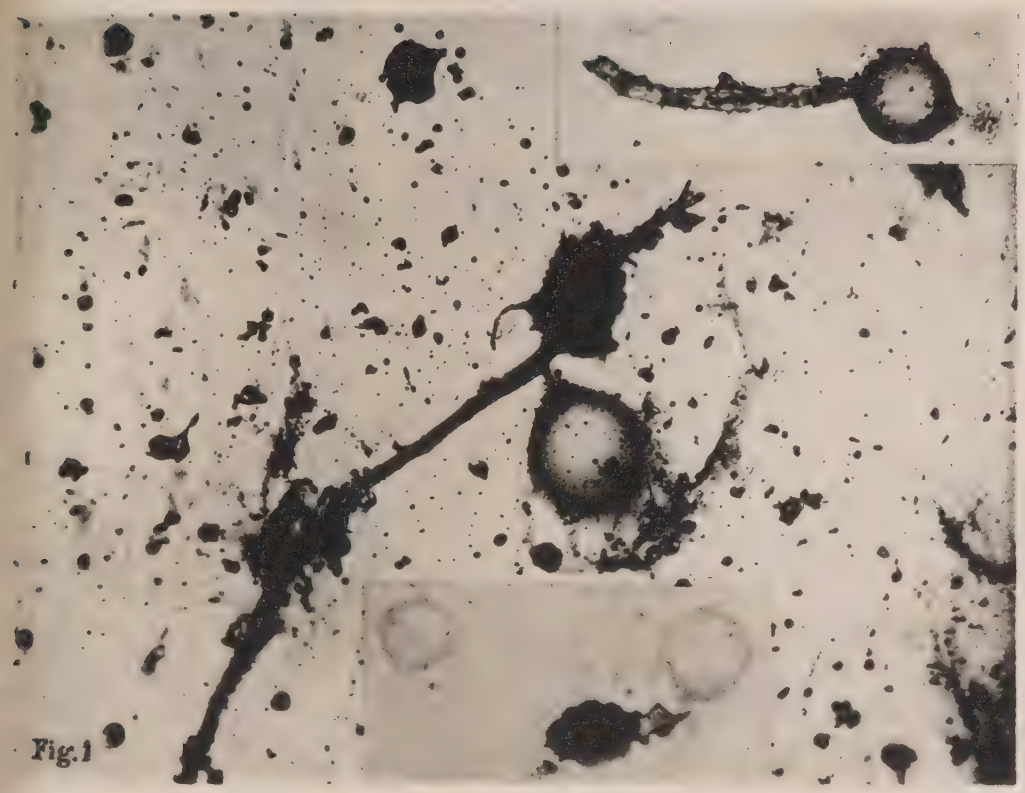

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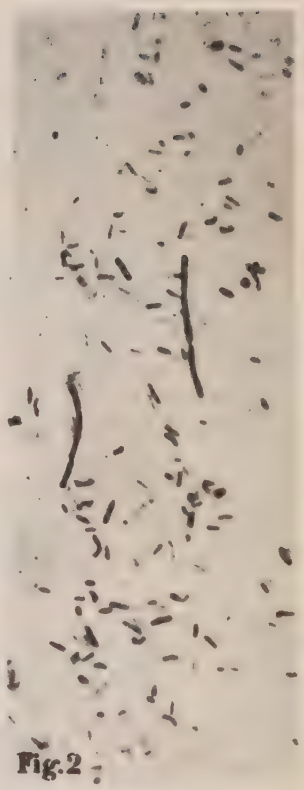

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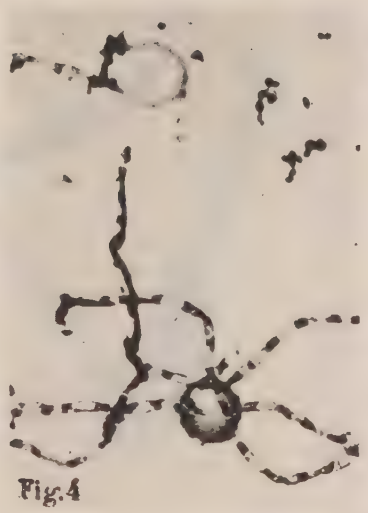

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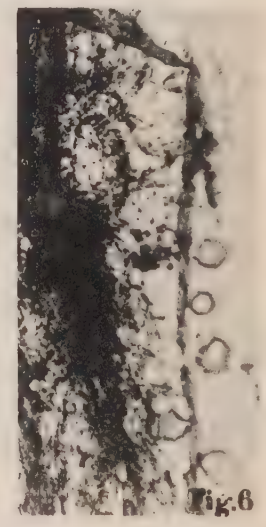

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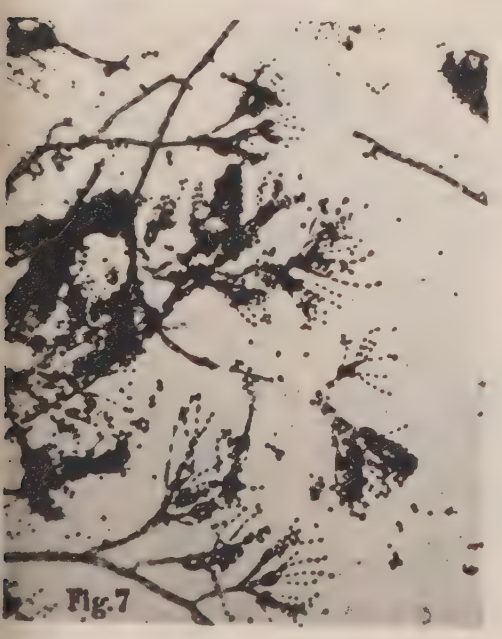

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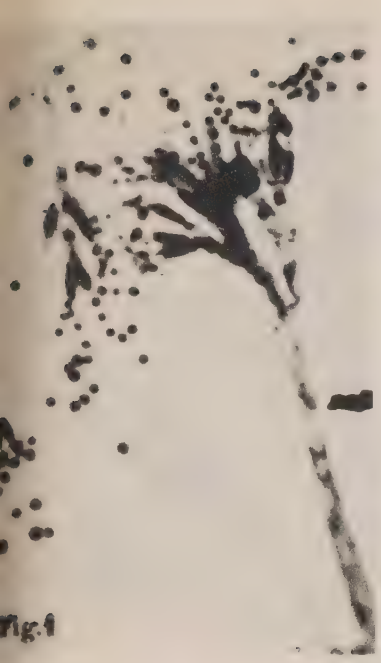

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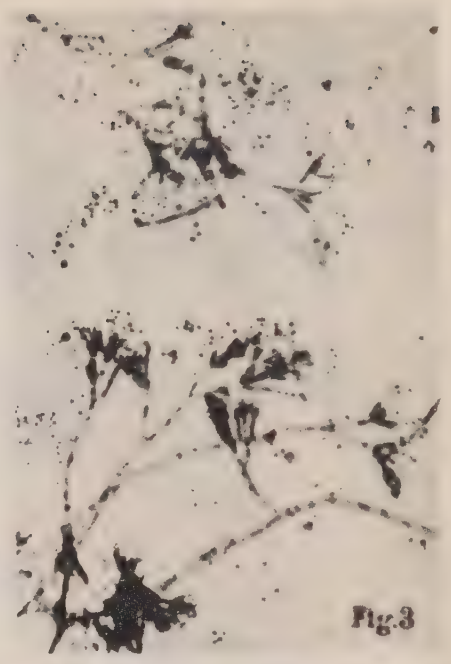

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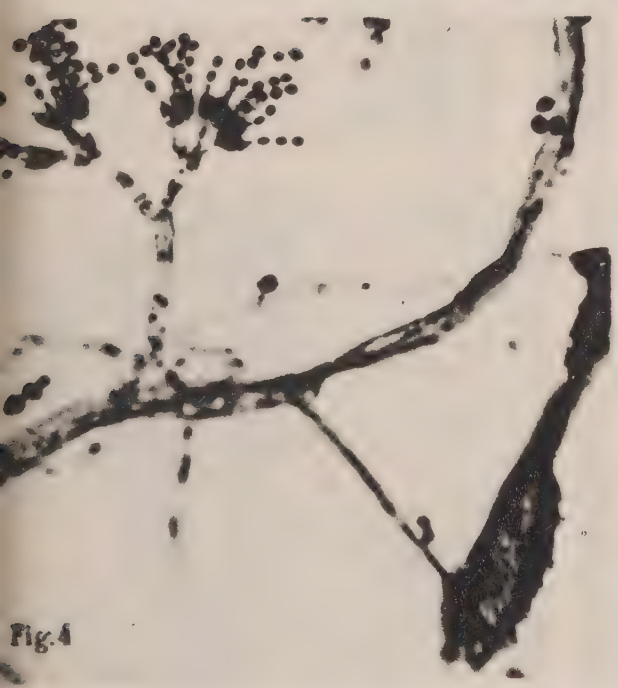

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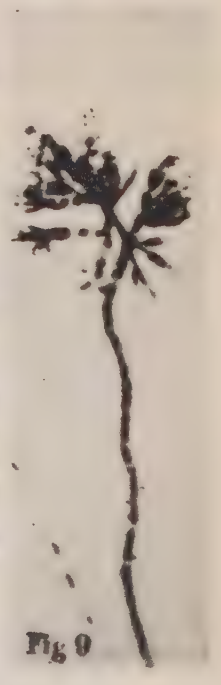

Fig.9

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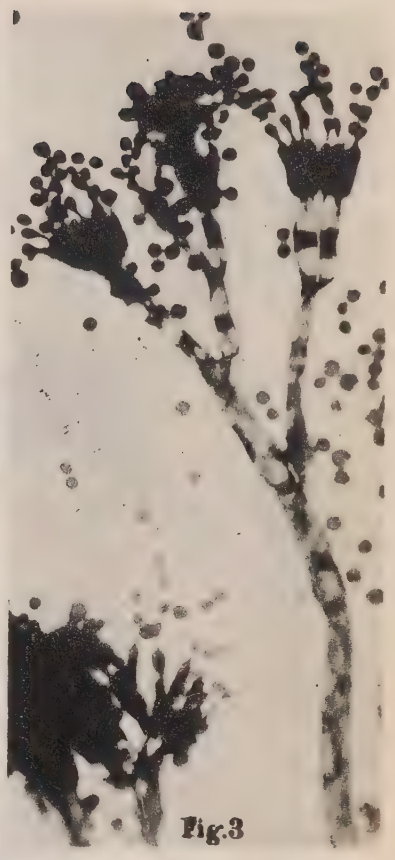

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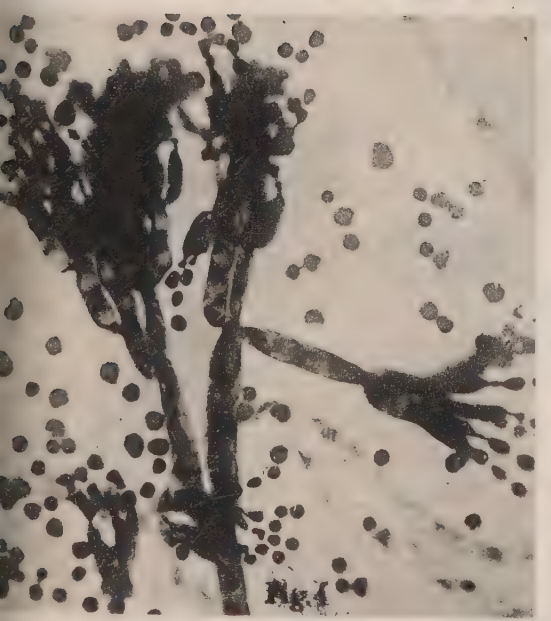

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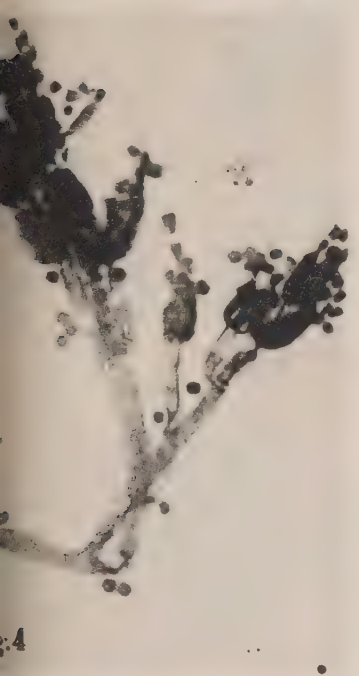

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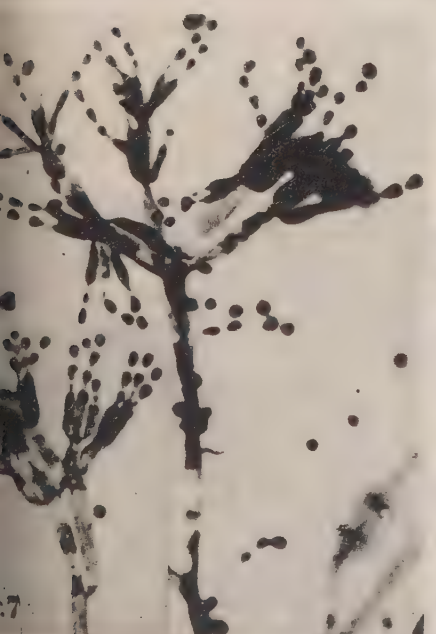

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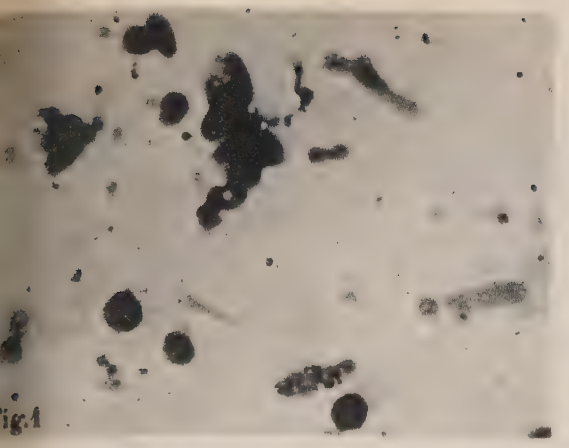

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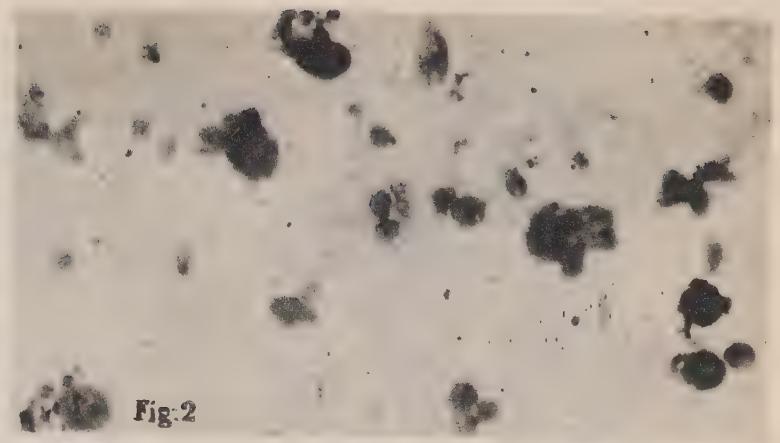

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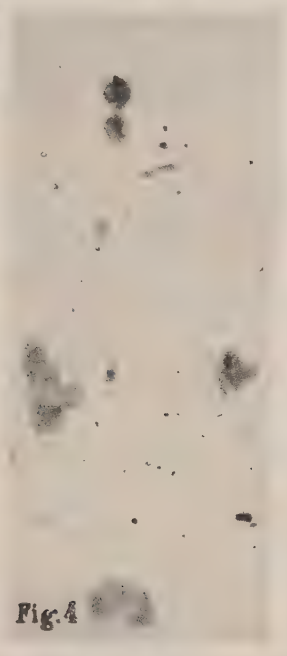

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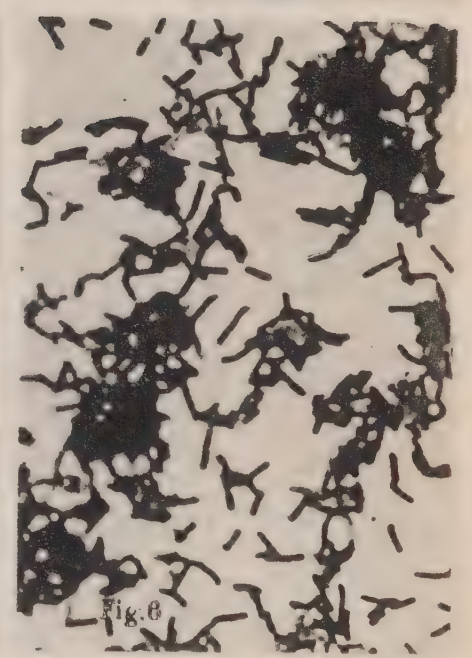

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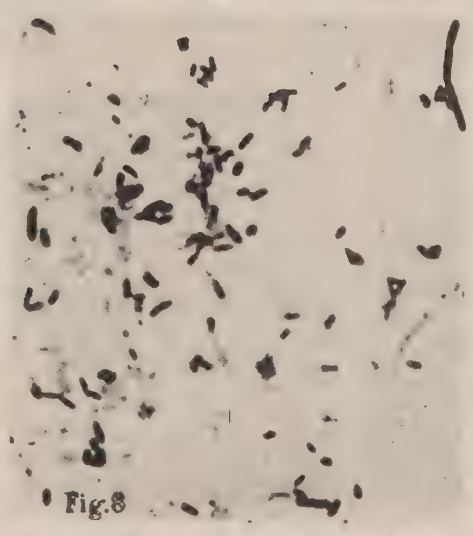

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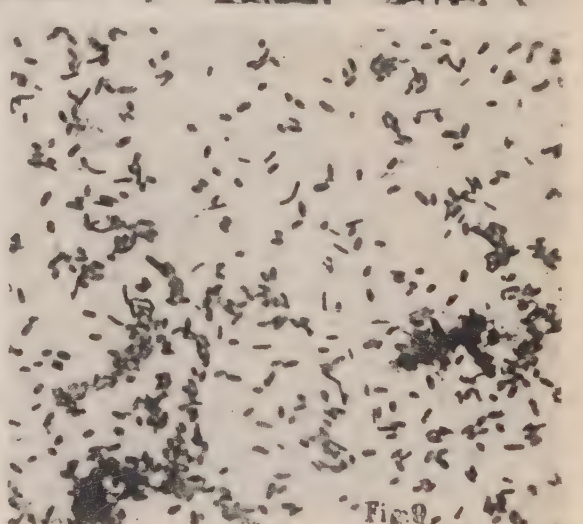

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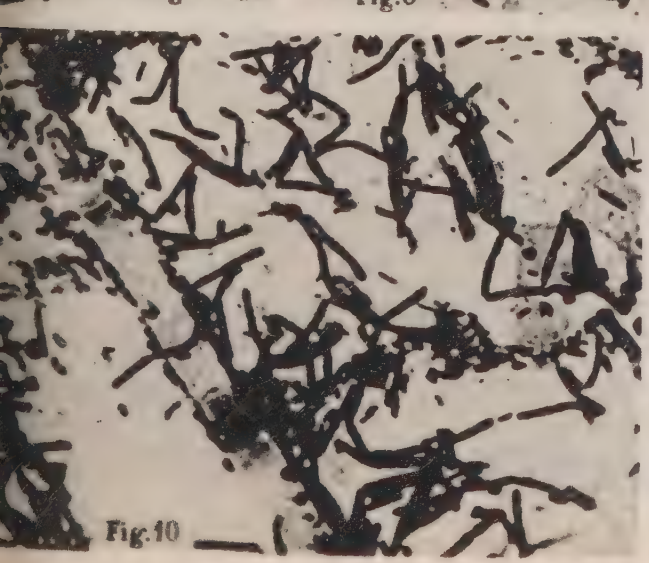

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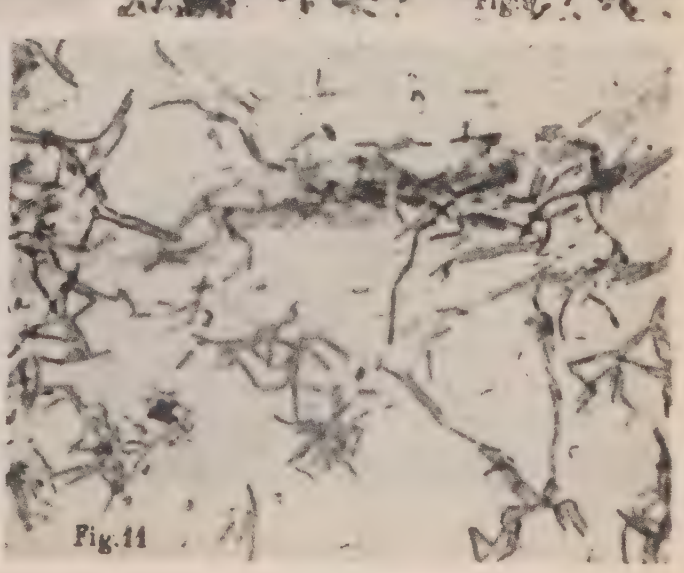

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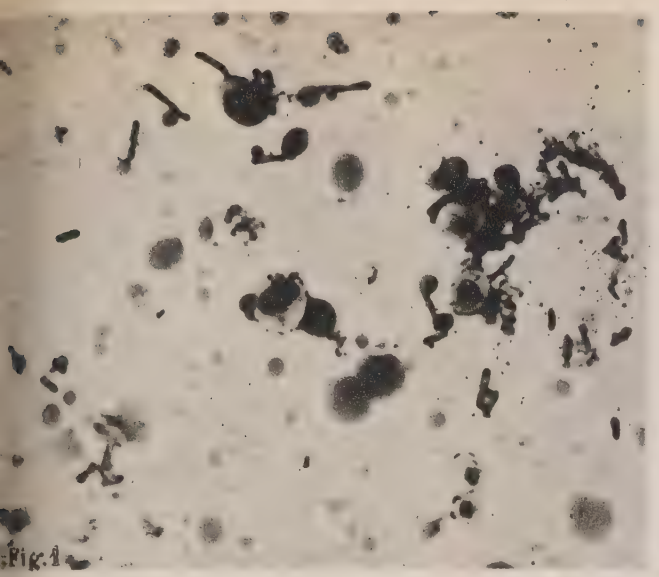
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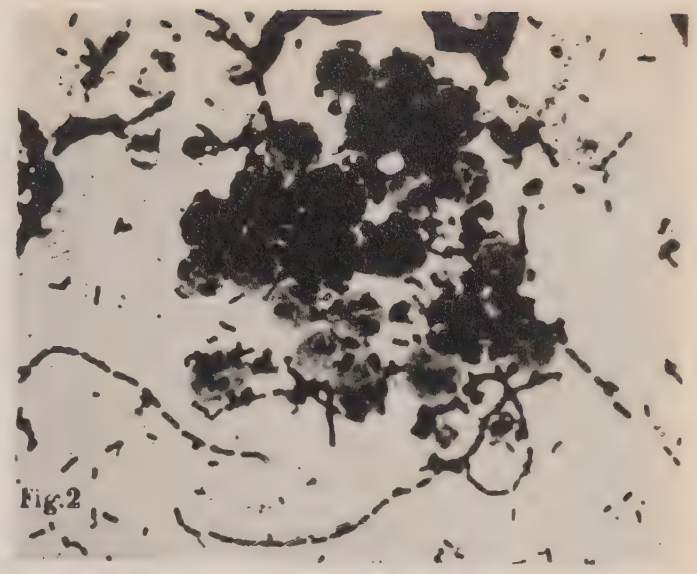
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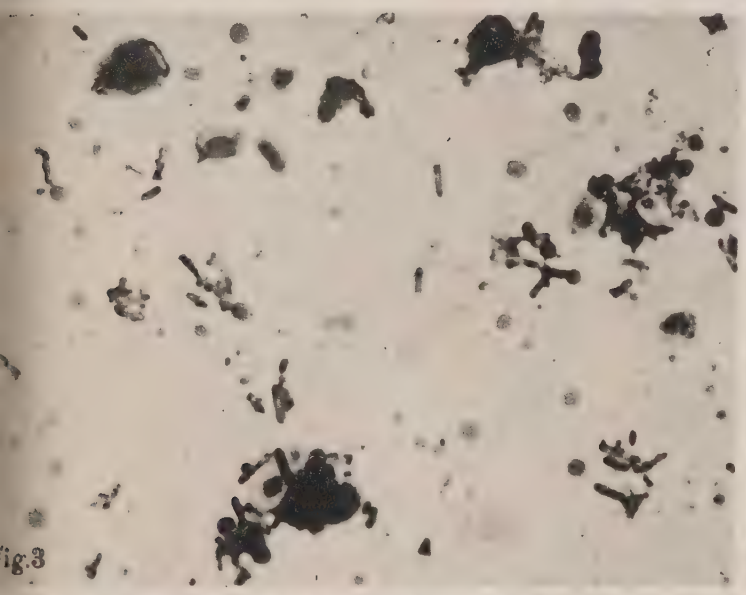
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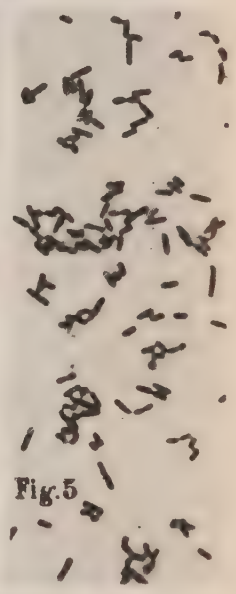
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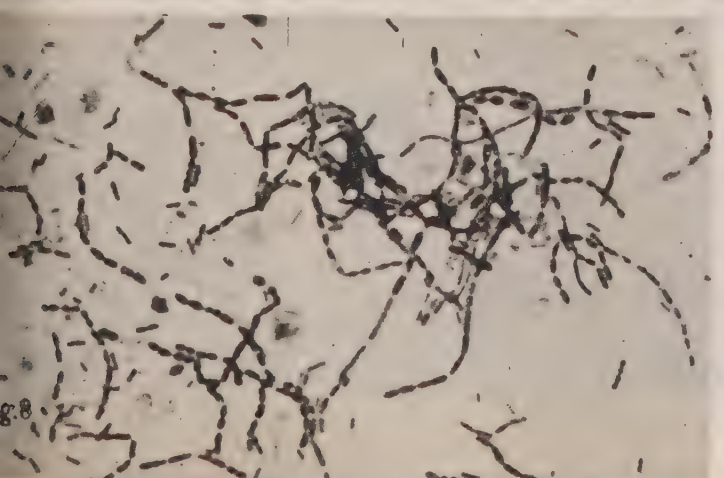
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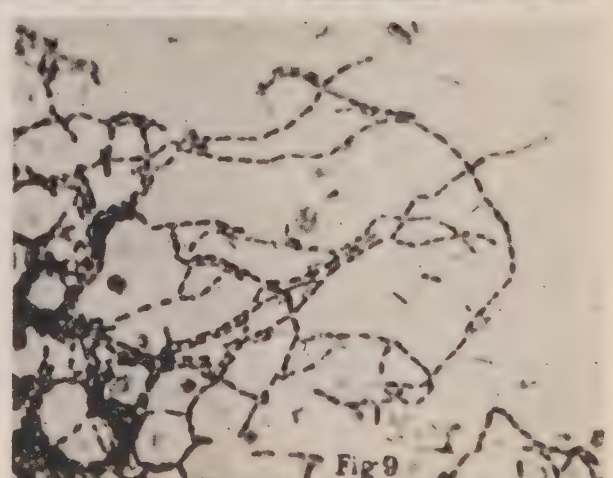
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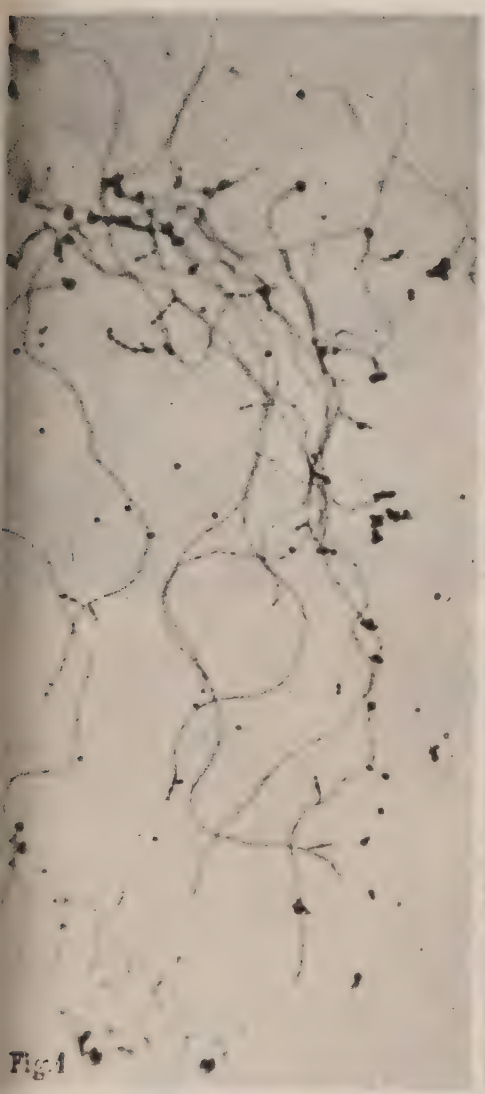
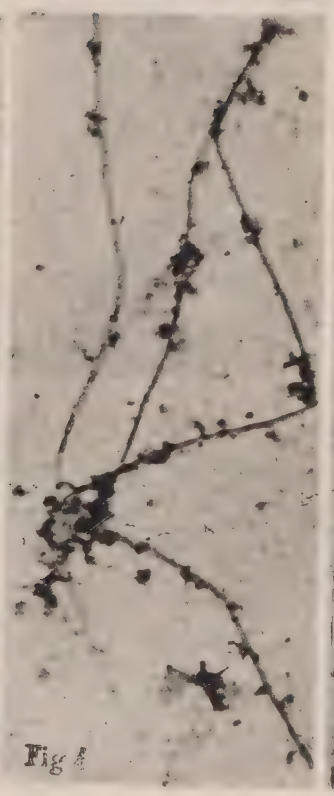


Fig. 1

Fig. 2

Fig. 3



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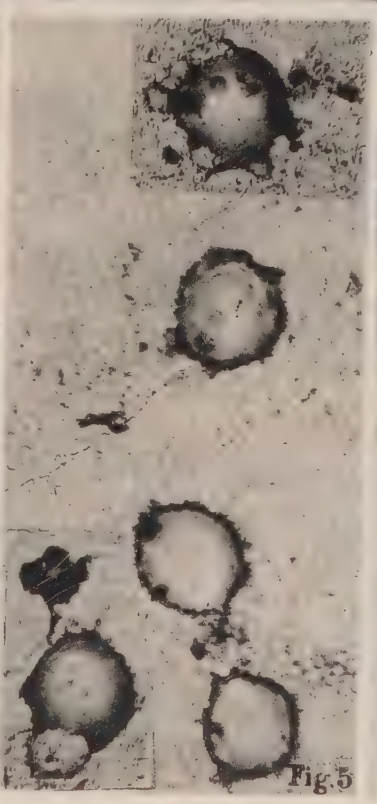

Fig. 5

Fig. 6

Fig.1

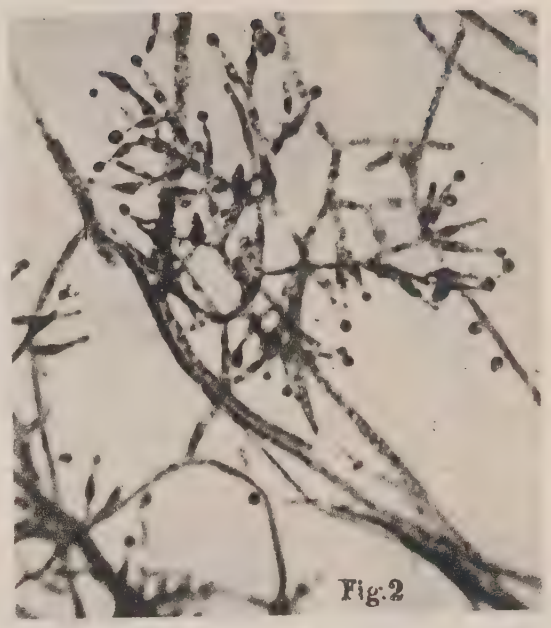

Fig.2

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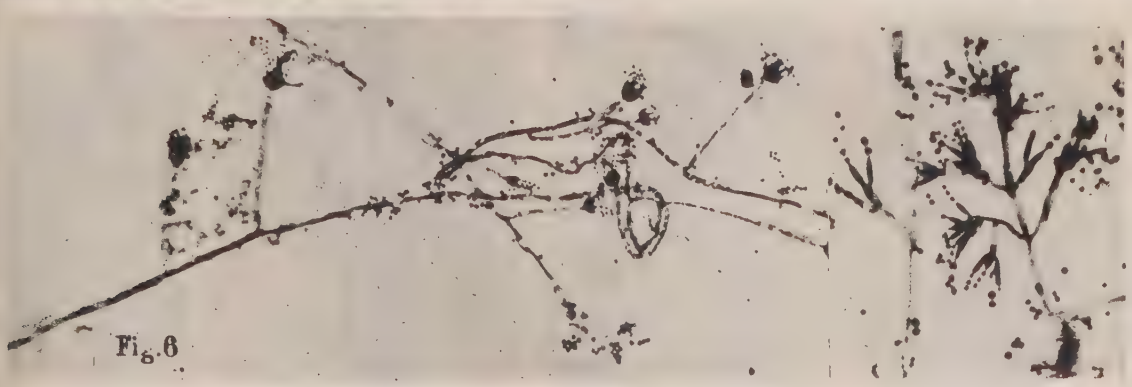

Fig.6

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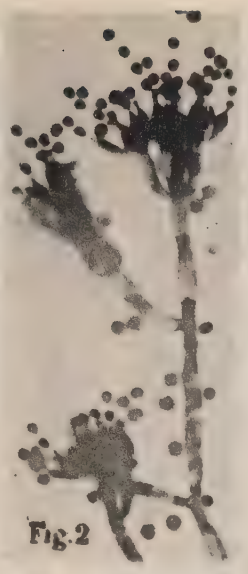
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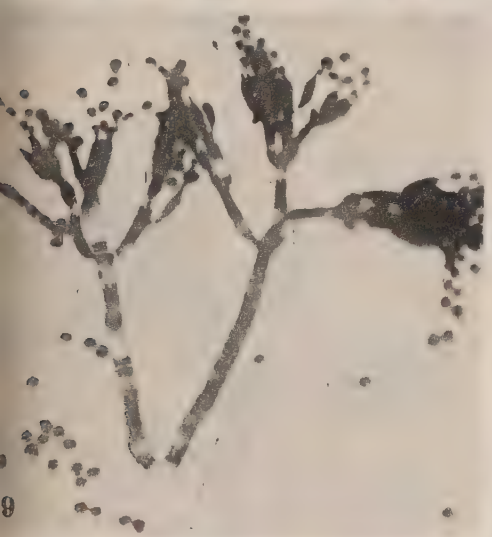
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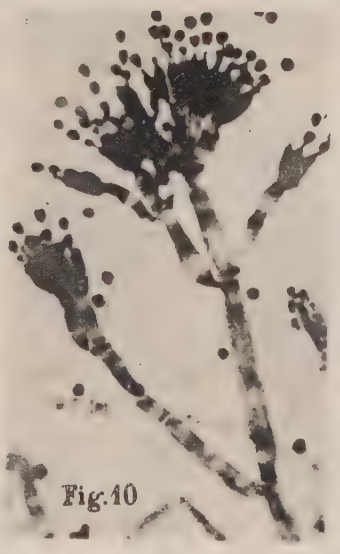
Fig.10

Fig.11

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Fig.14

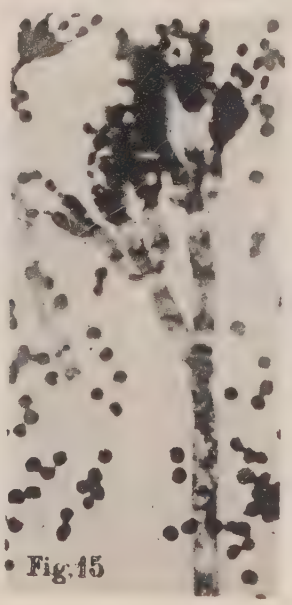
Fig.15

Fig.16

Fig.17

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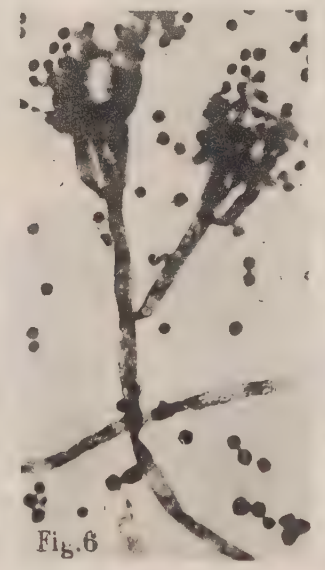
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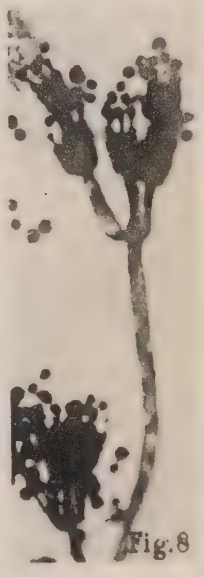
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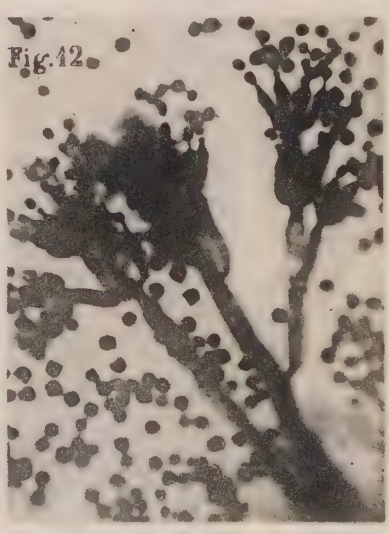
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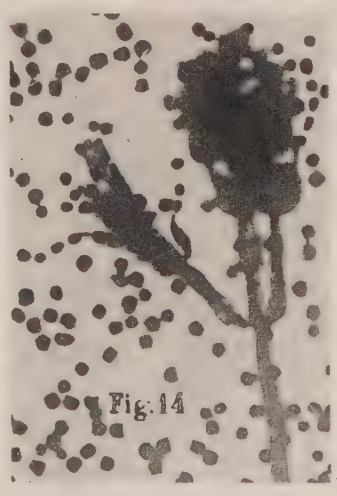
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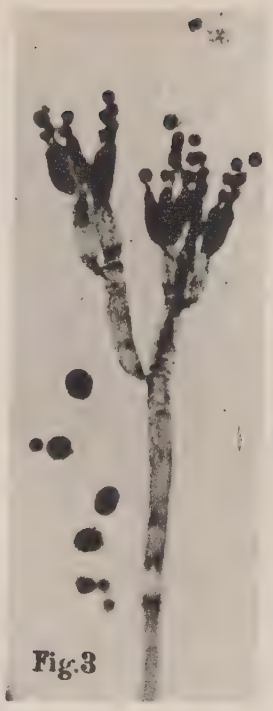
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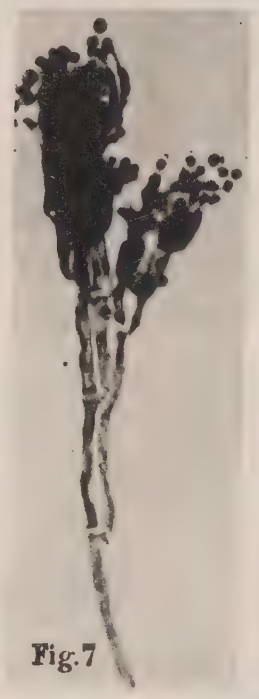
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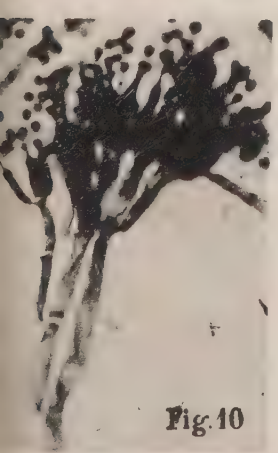
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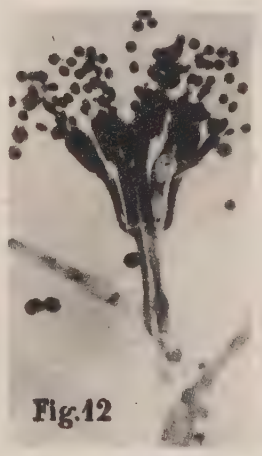
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Fig.13

Fig.14

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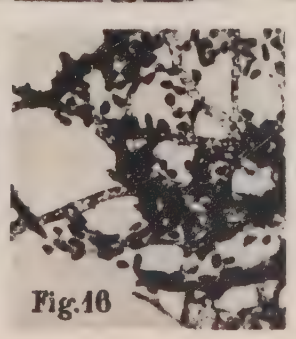
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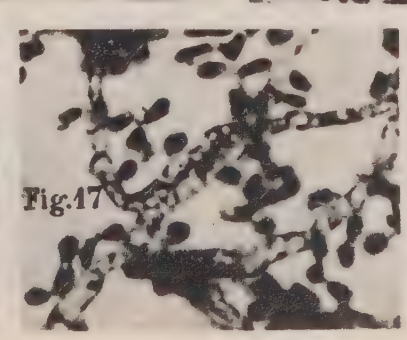
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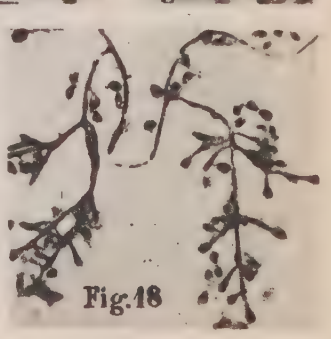
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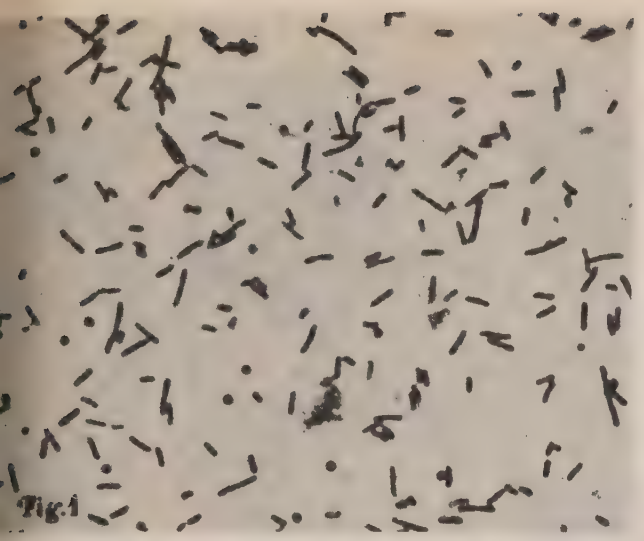
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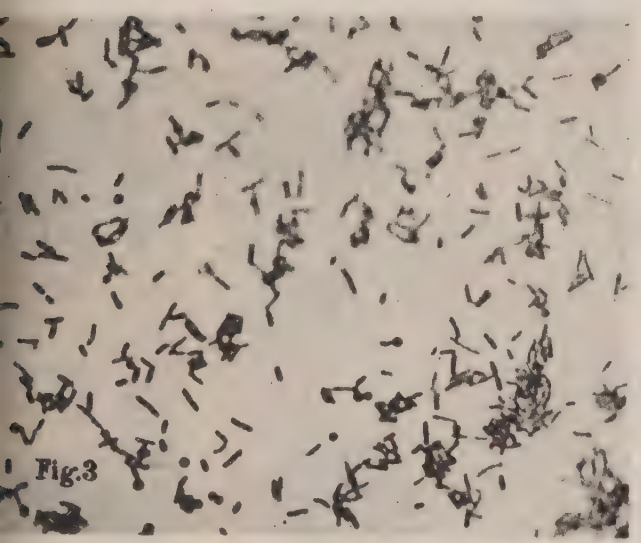
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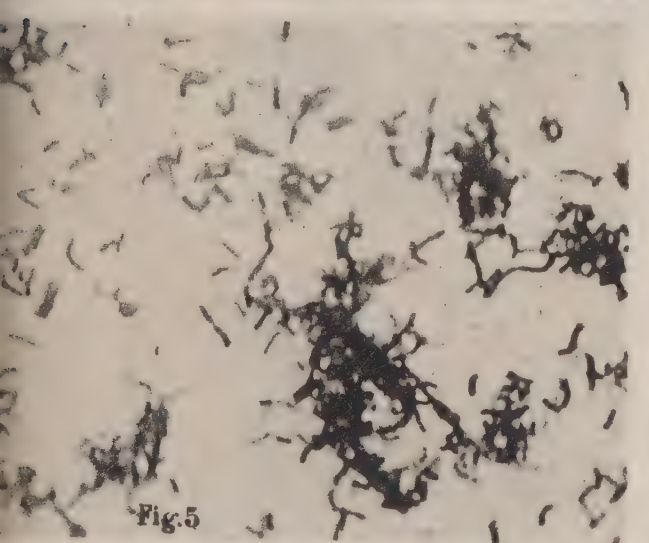
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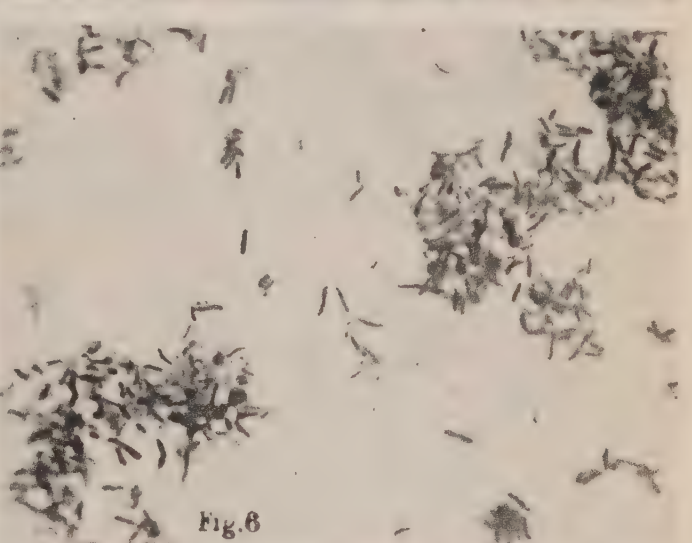
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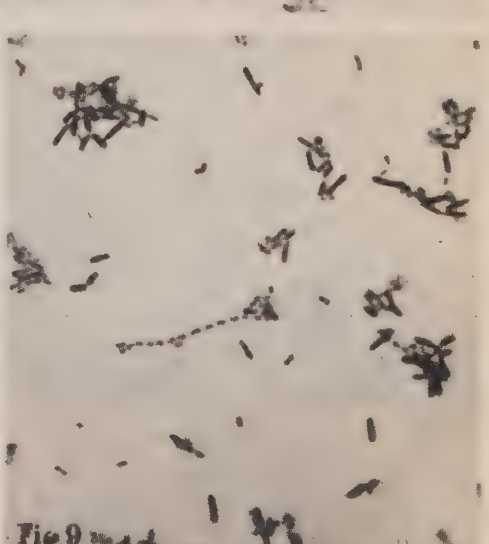
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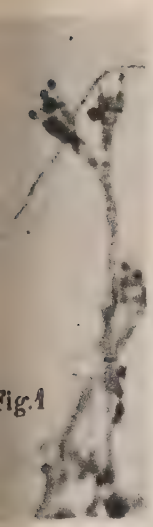

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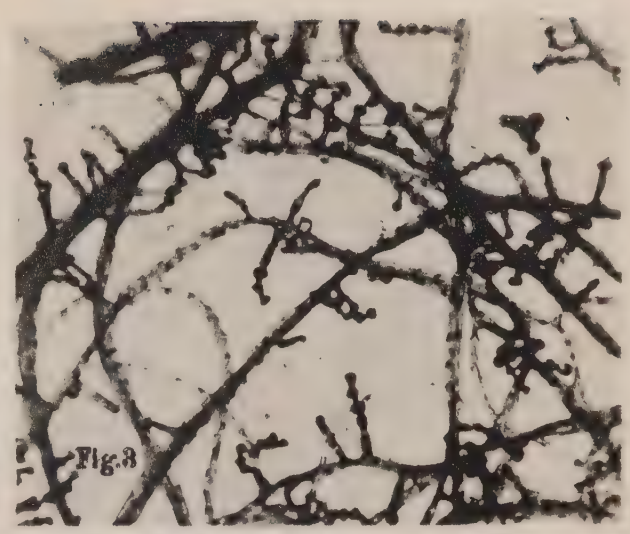

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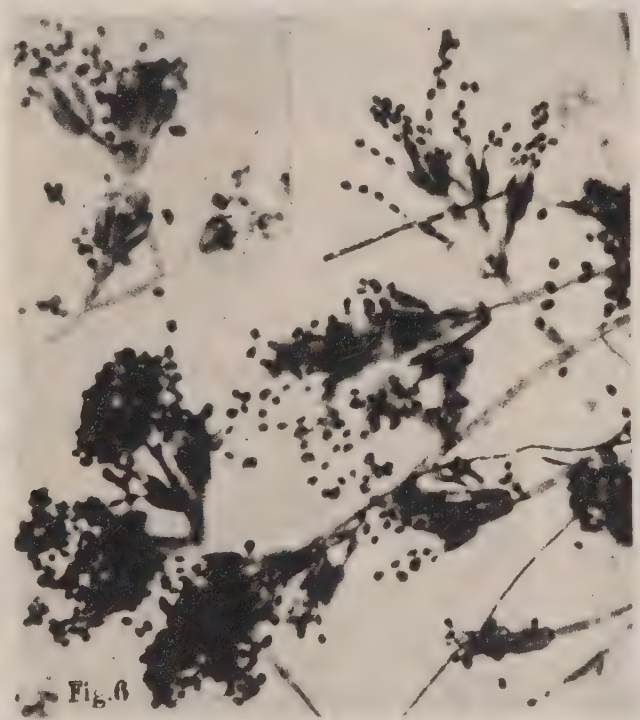

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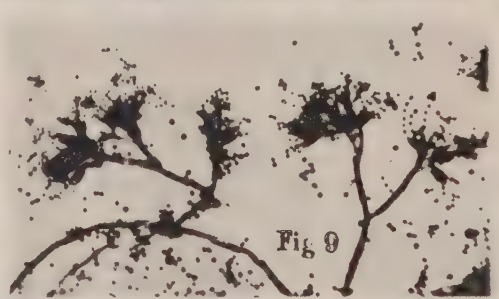

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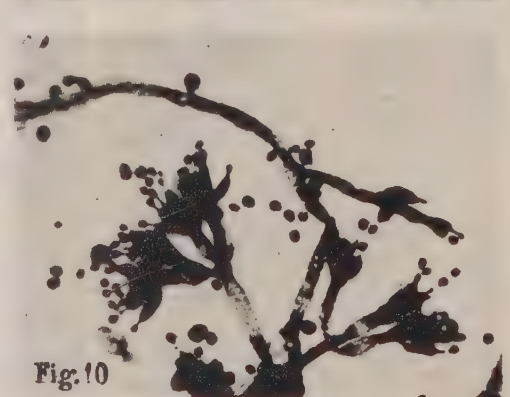

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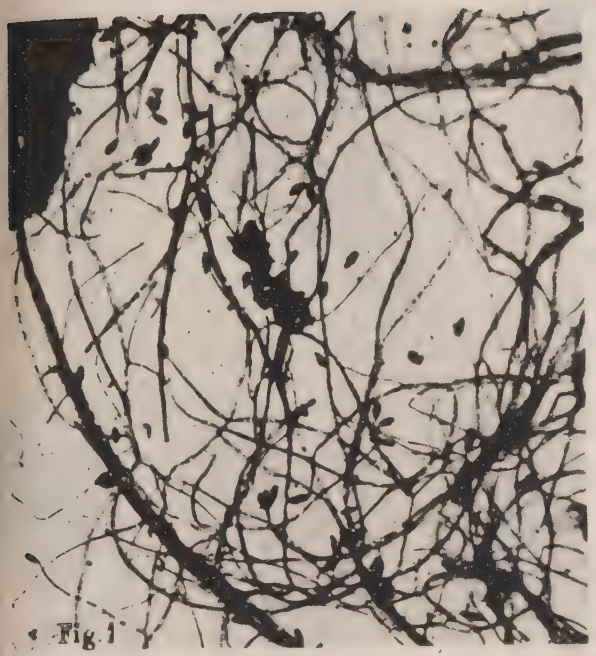

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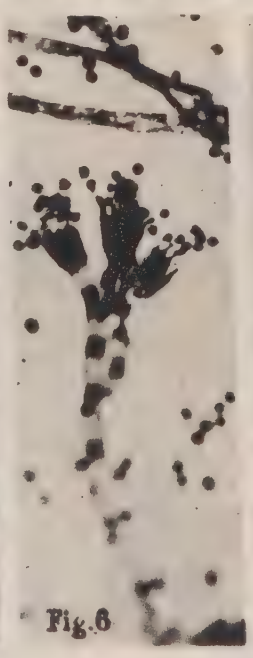

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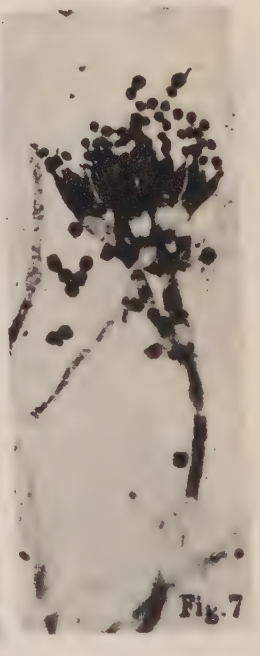

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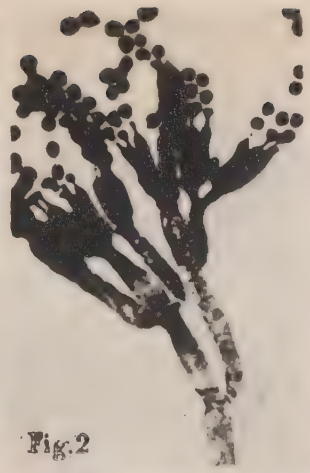

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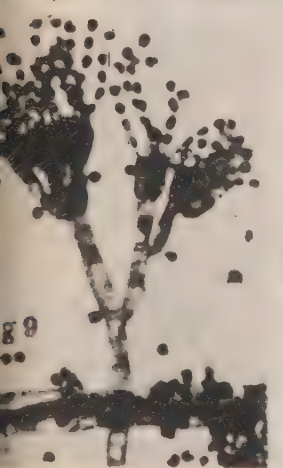

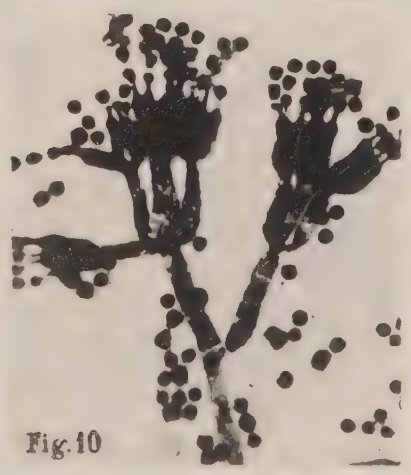

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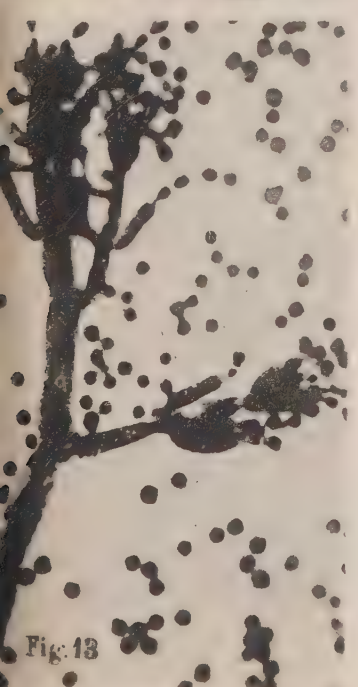

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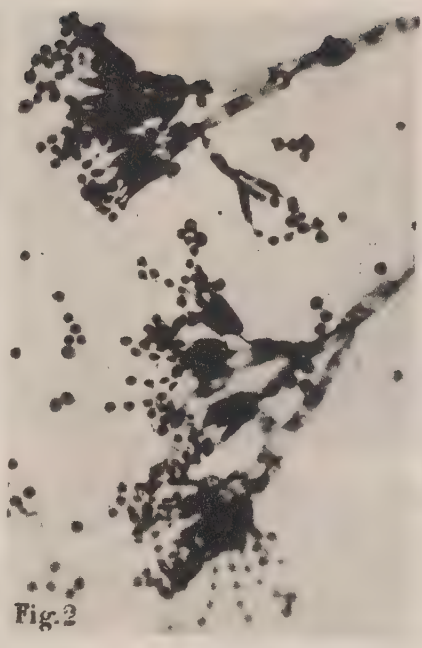
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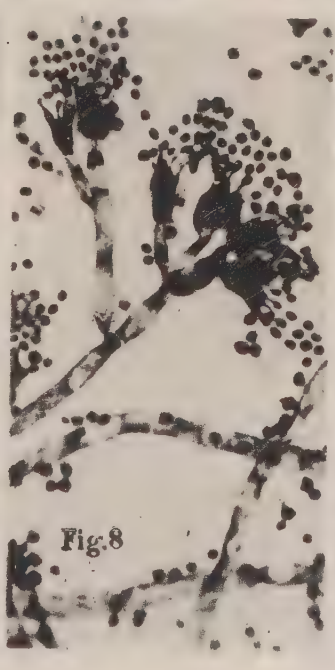
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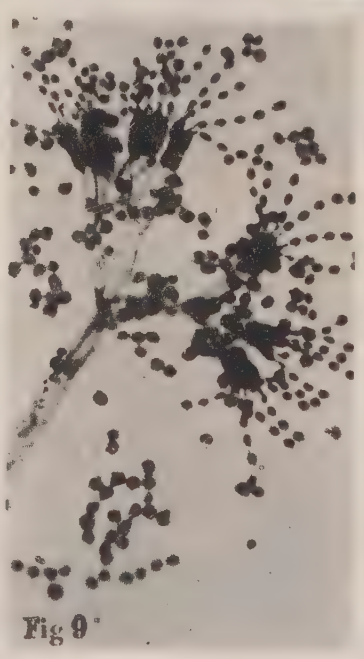
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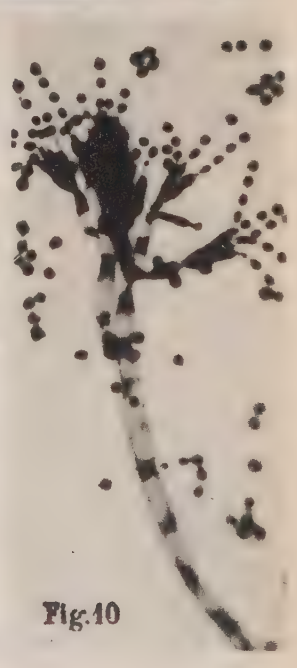
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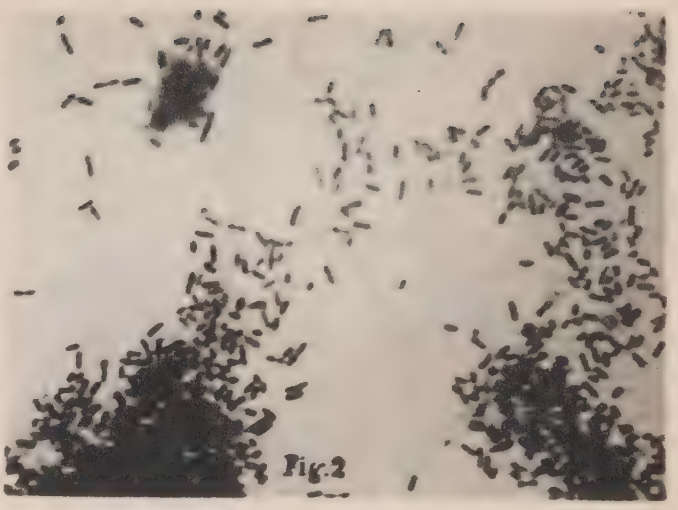
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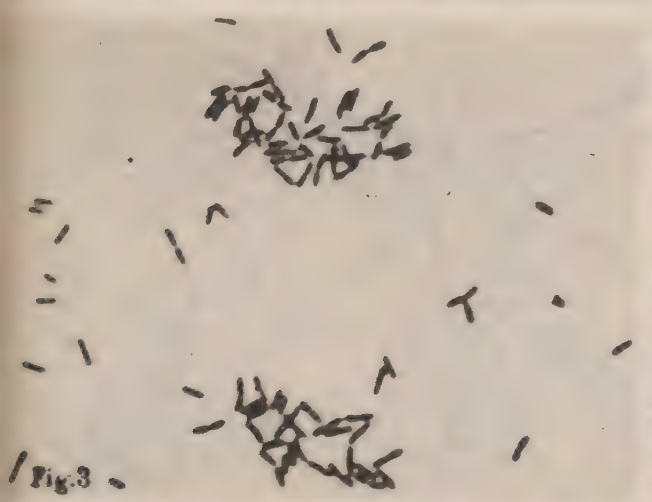
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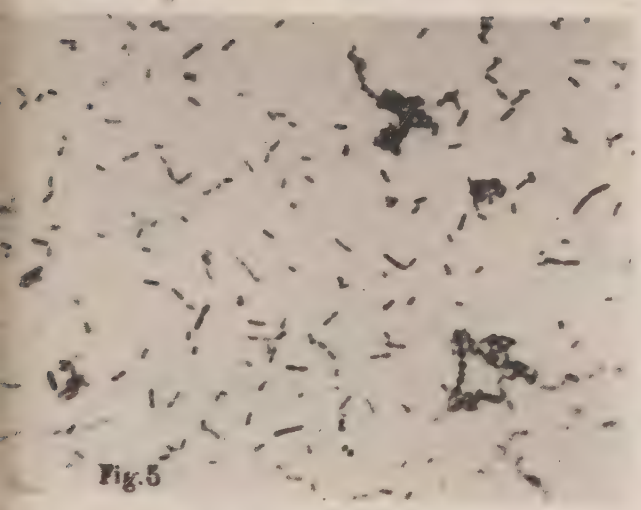
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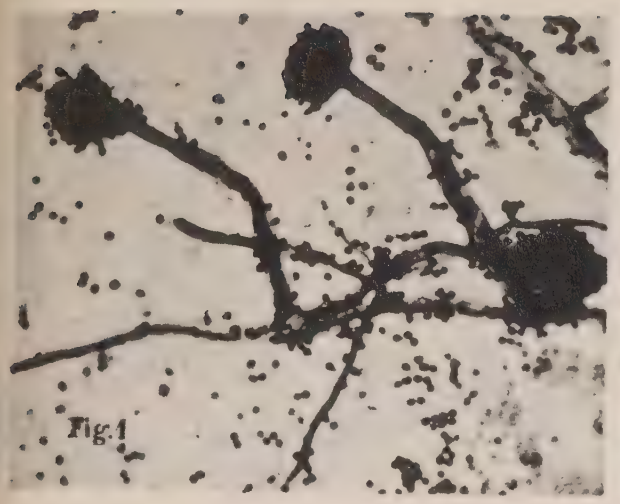

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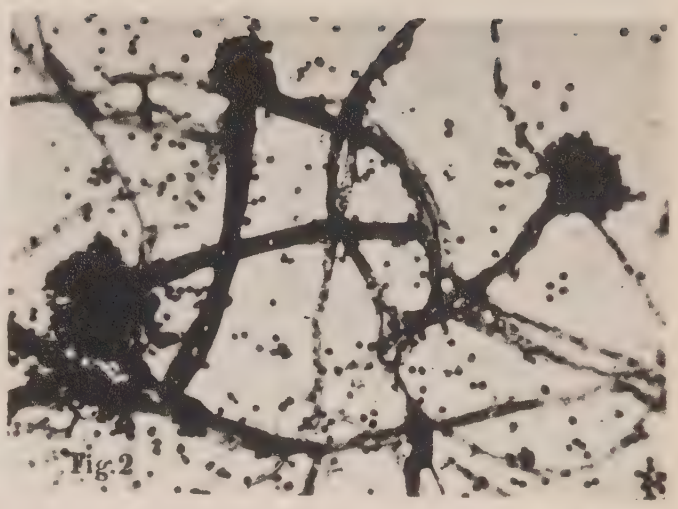

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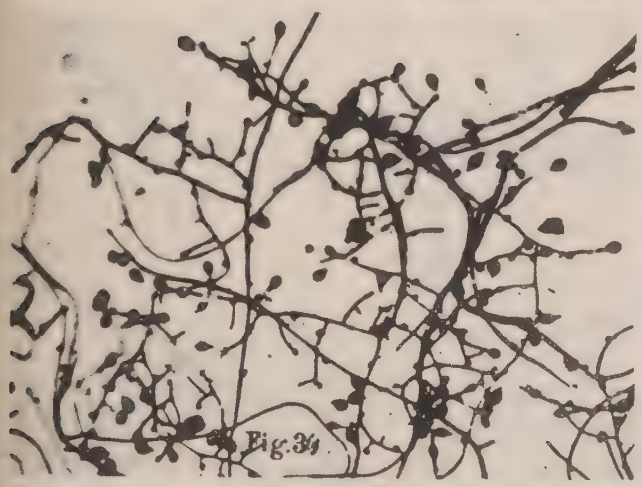

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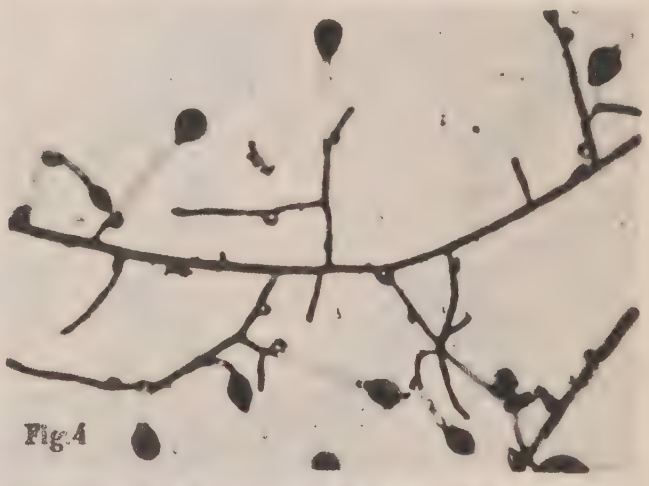

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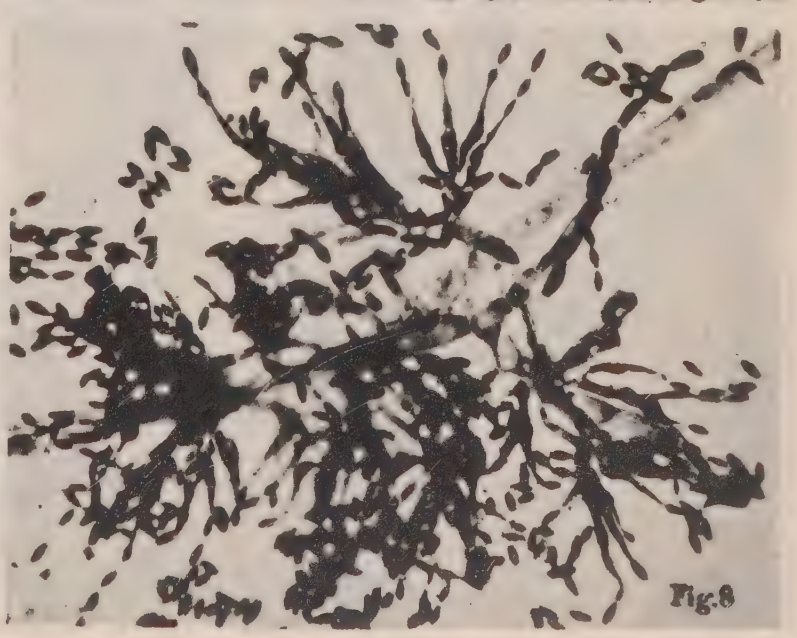

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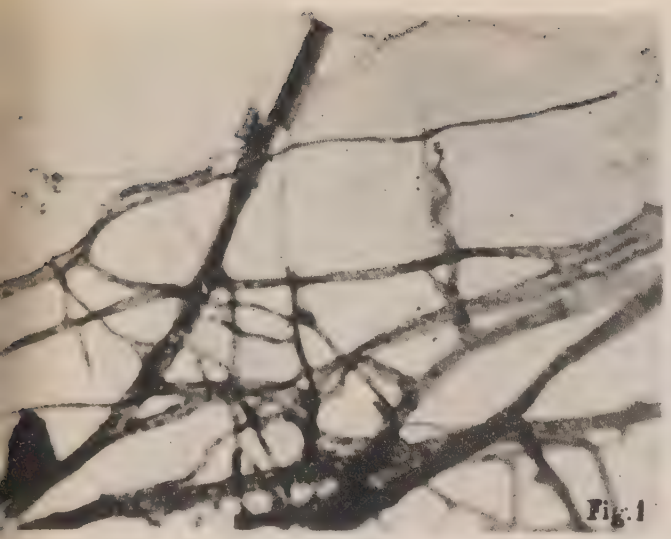

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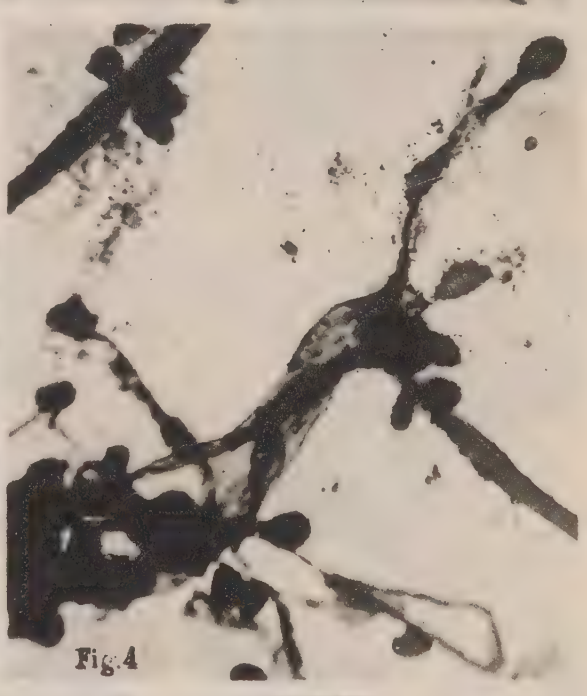

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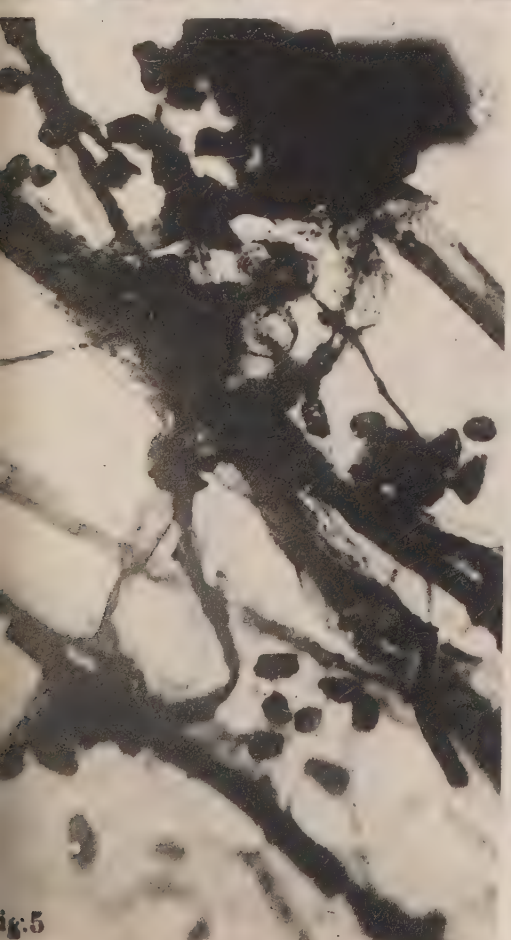

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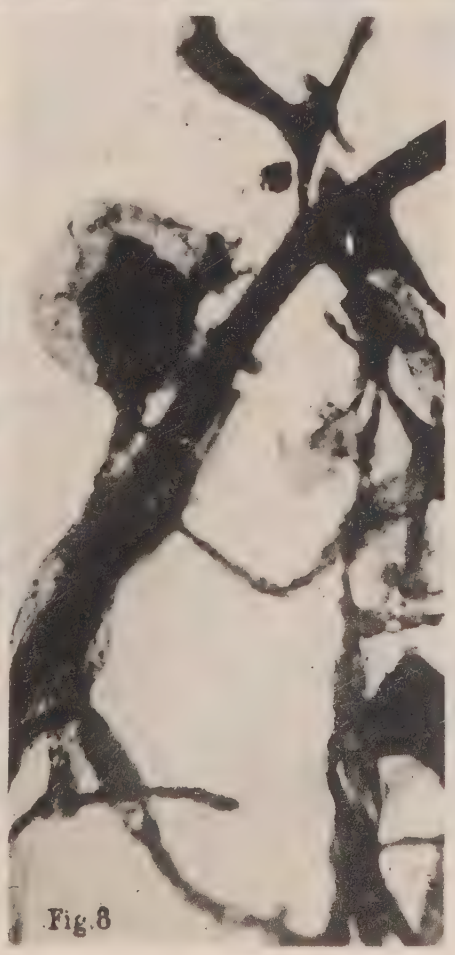

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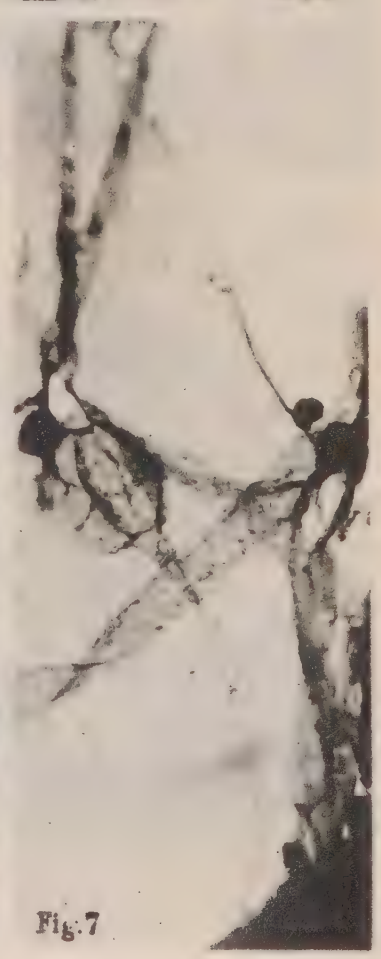

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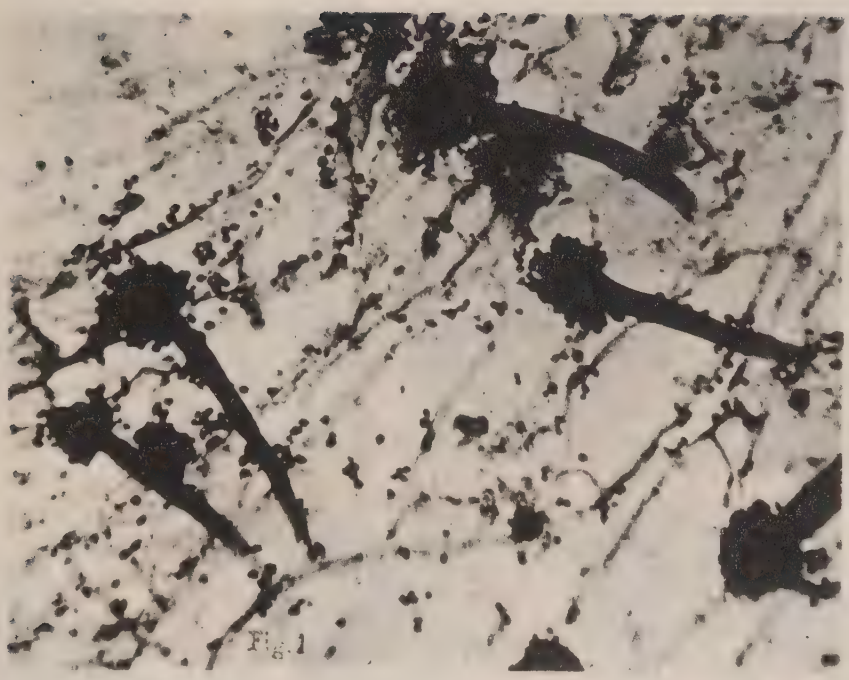

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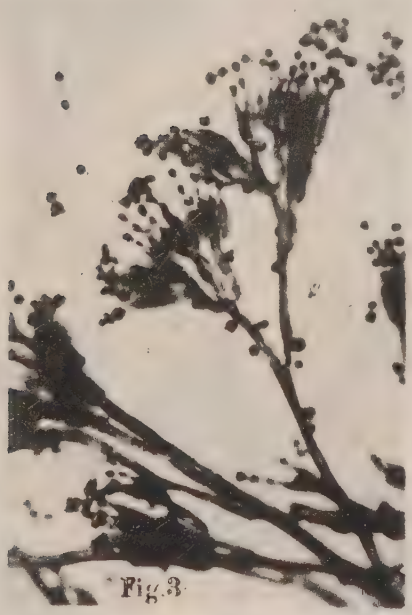

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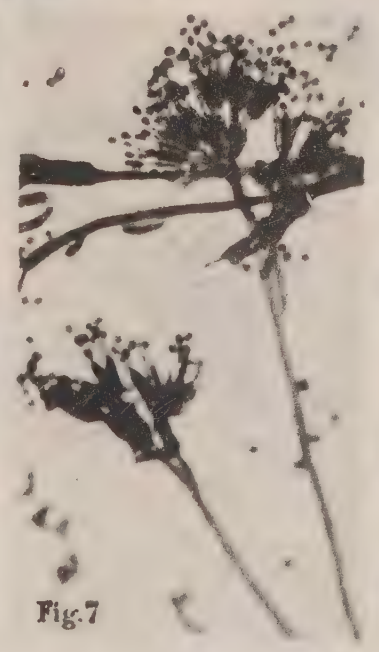

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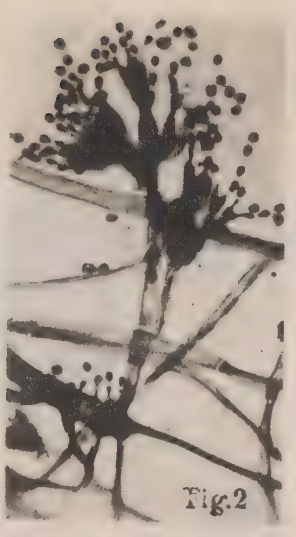

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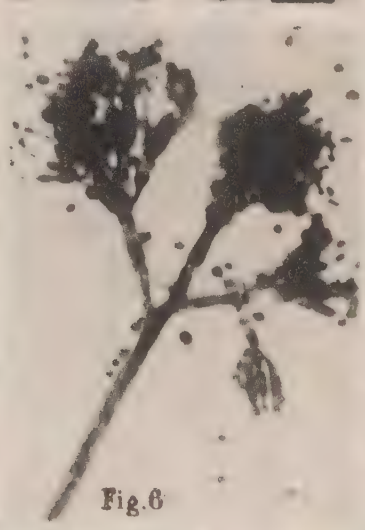

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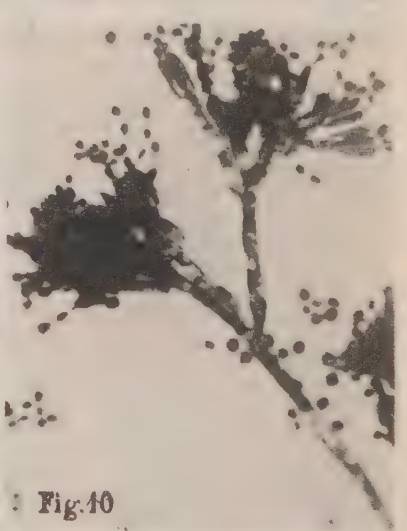

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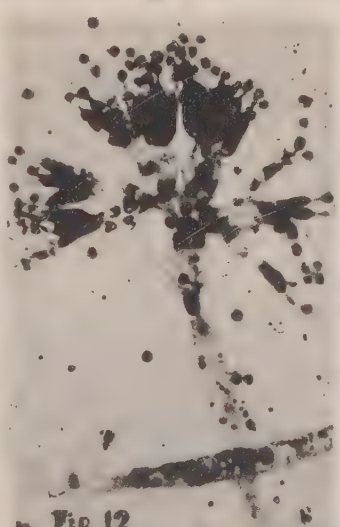

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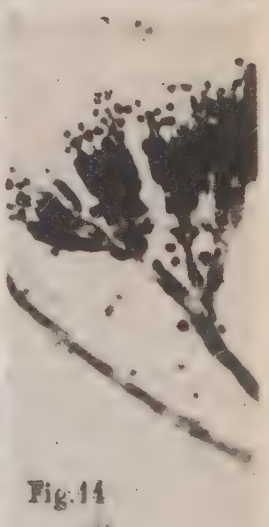

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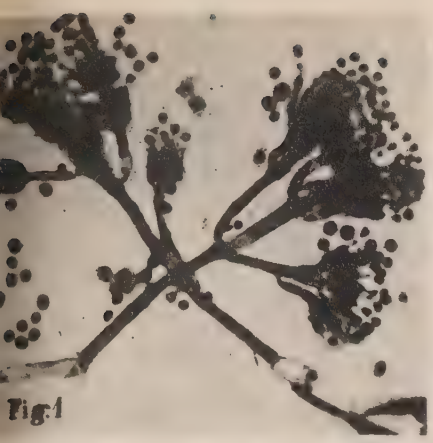
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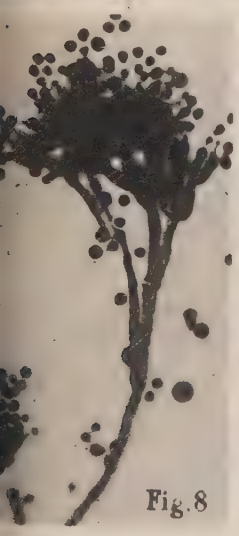
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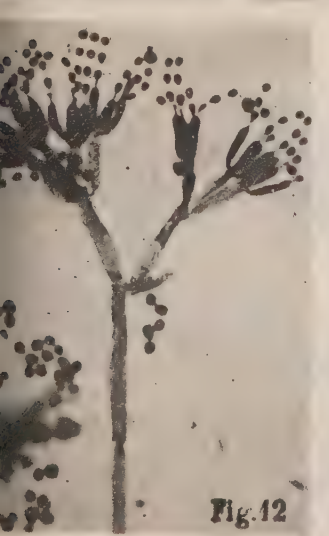
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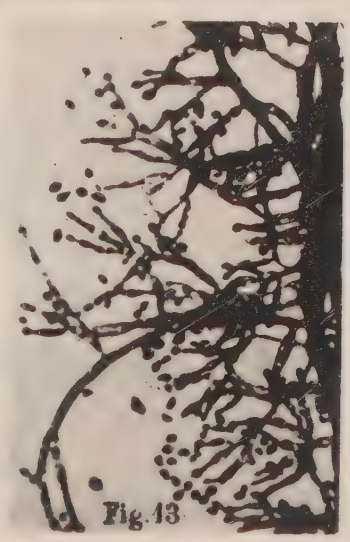
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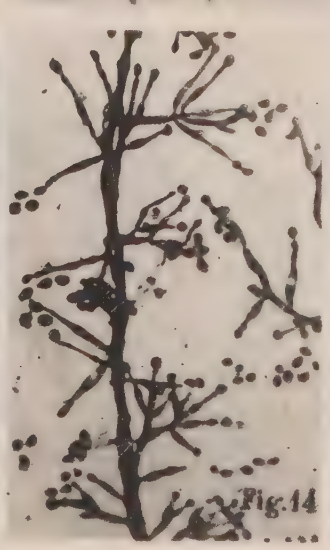
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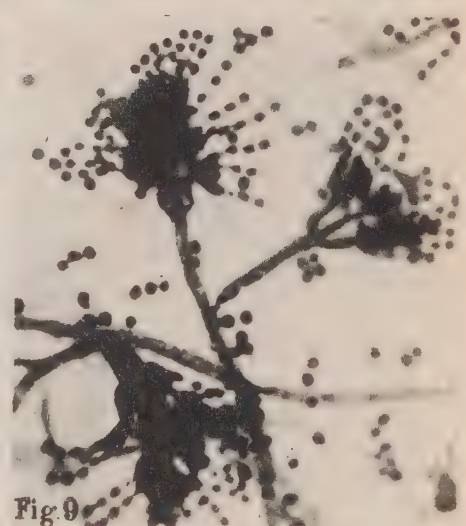

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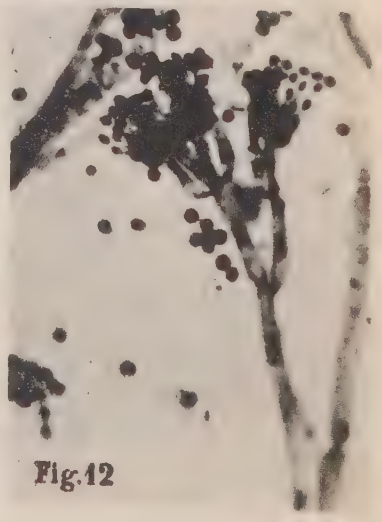

Fig.12

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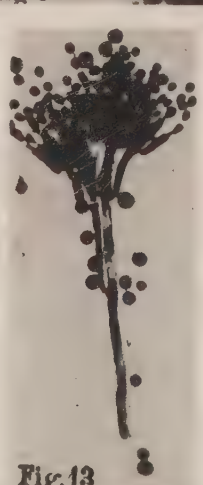

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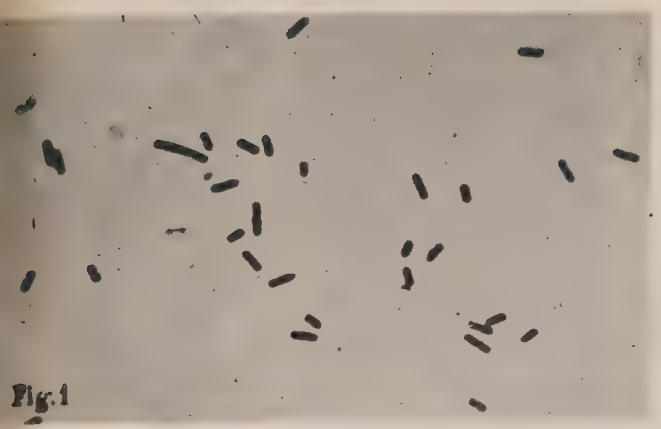

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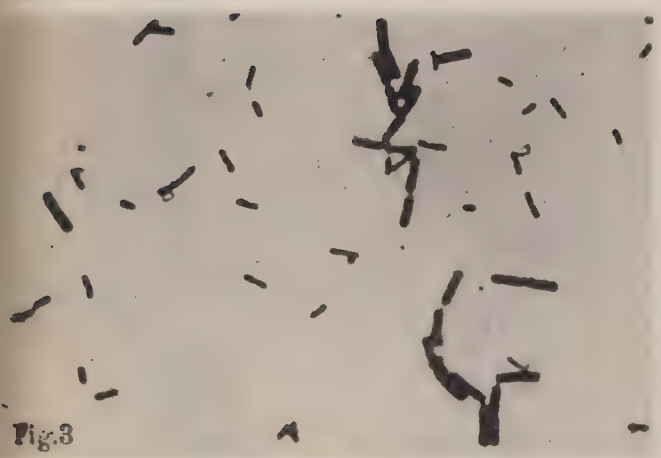

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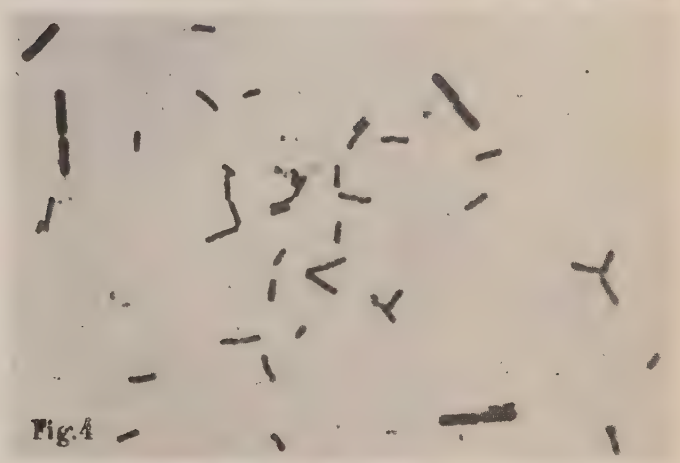

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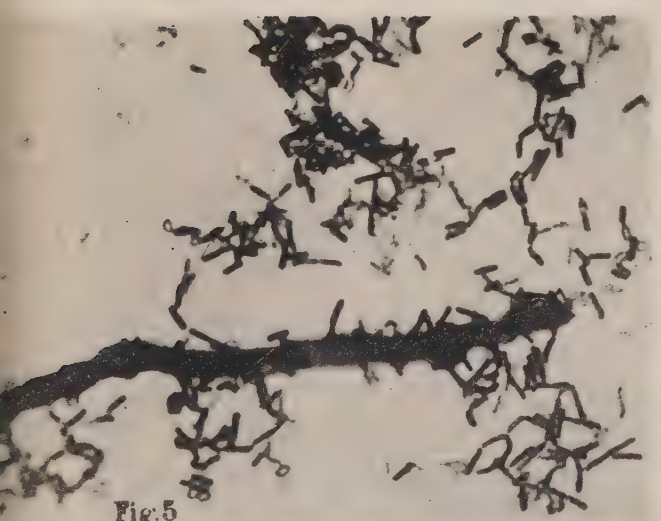

Fig.5

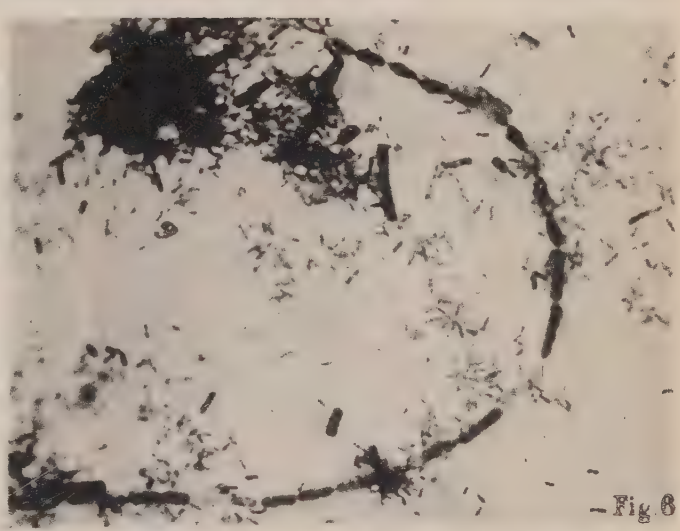

Fig.6

Fig.7

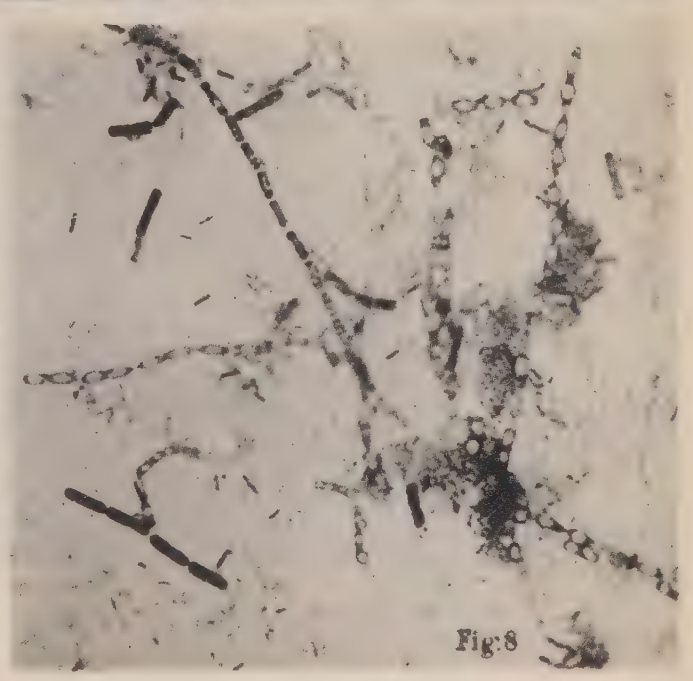

Fig.8

Fig. 1

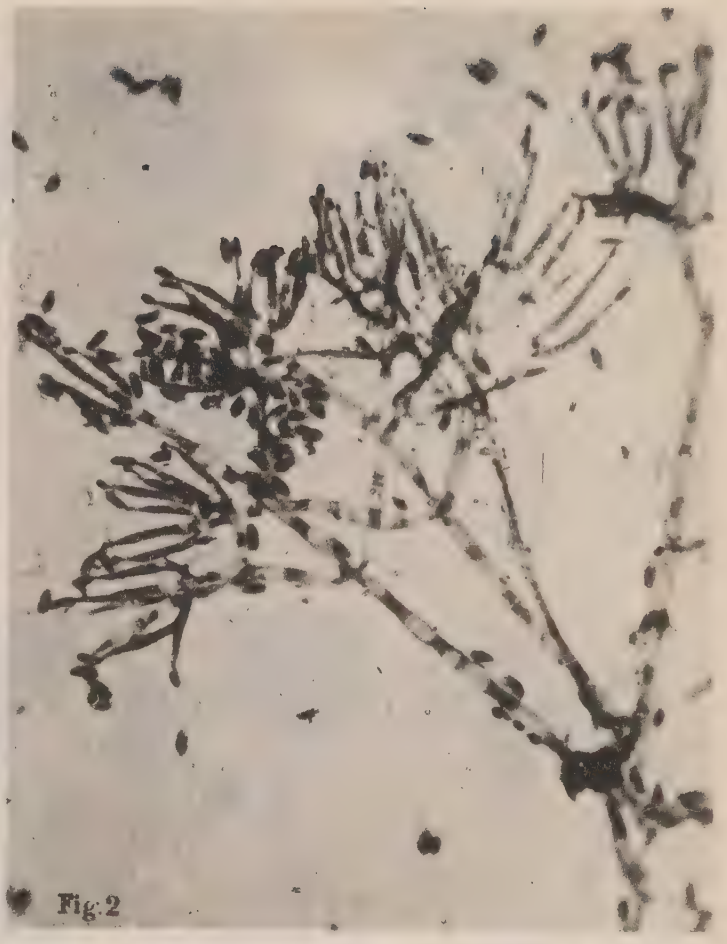

Fig. 2

Fig. 3

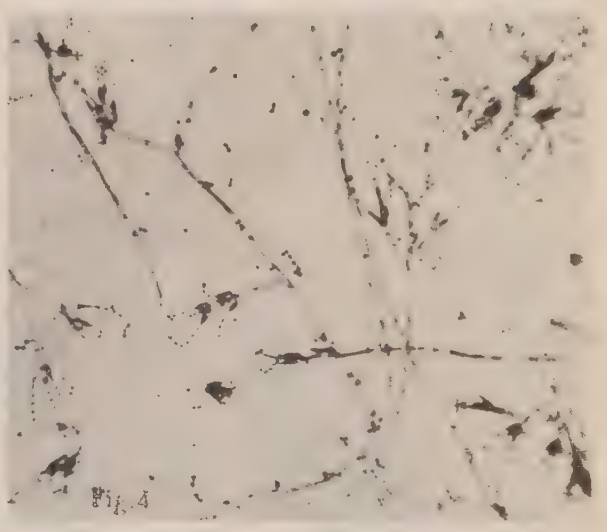

Fig. 4

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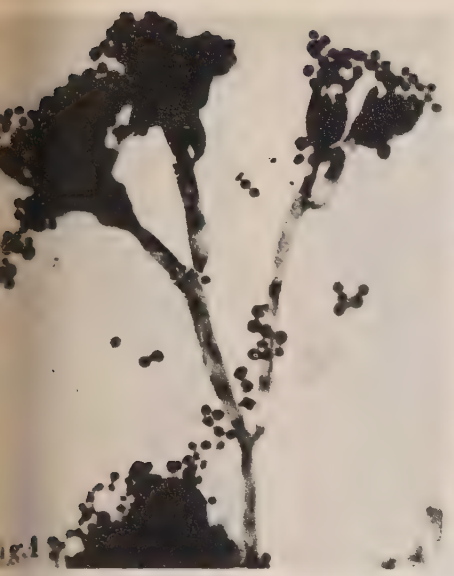

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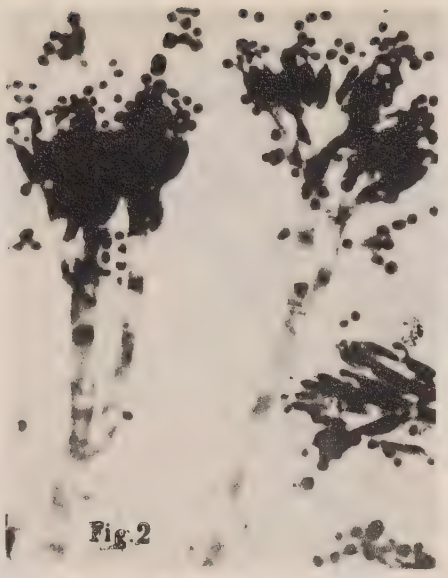

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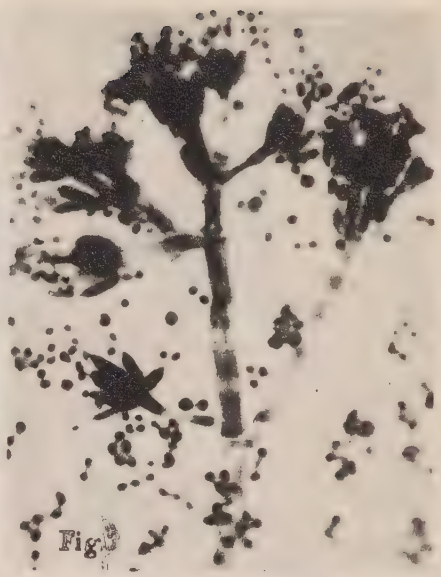

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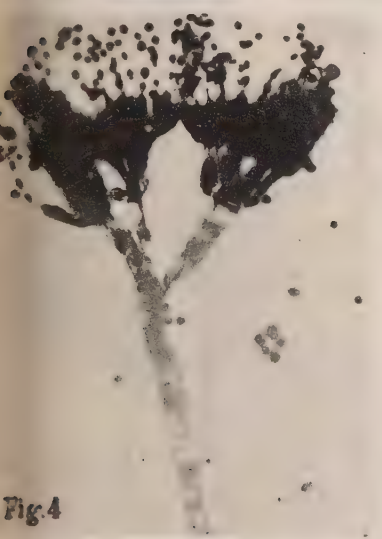

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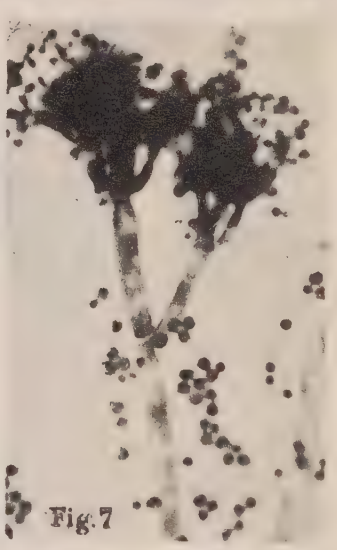

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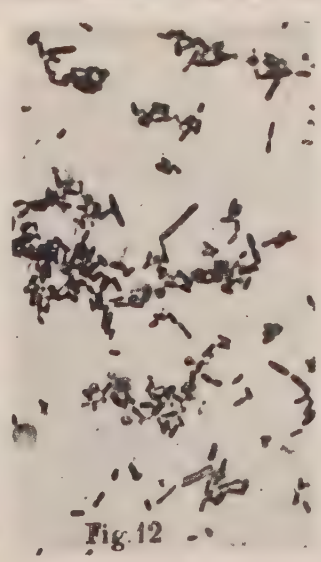

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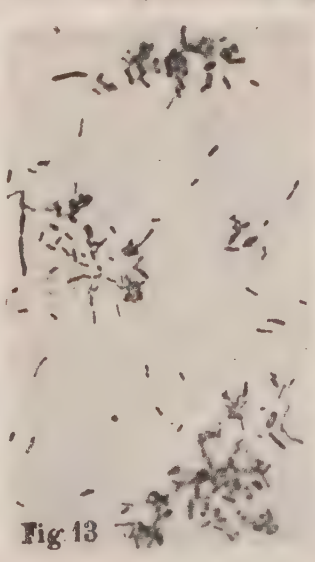

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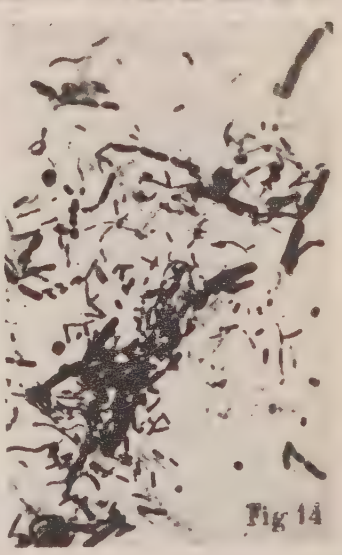

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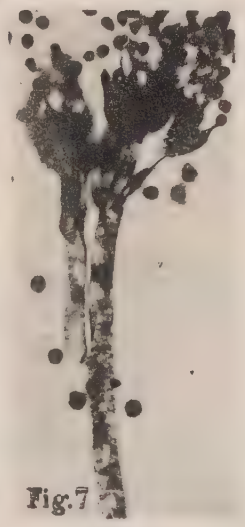
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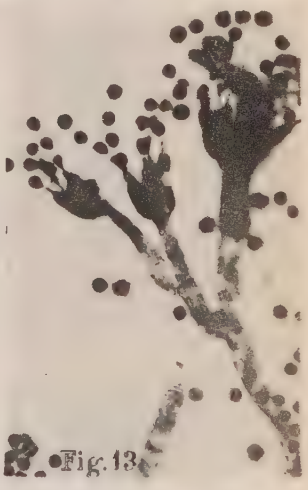
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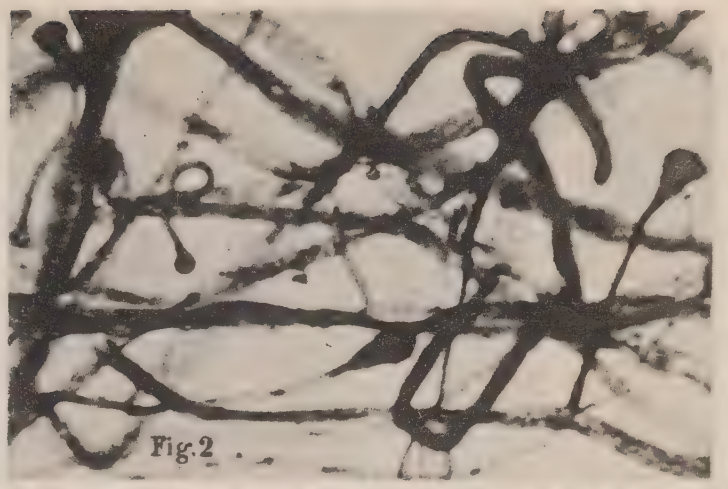

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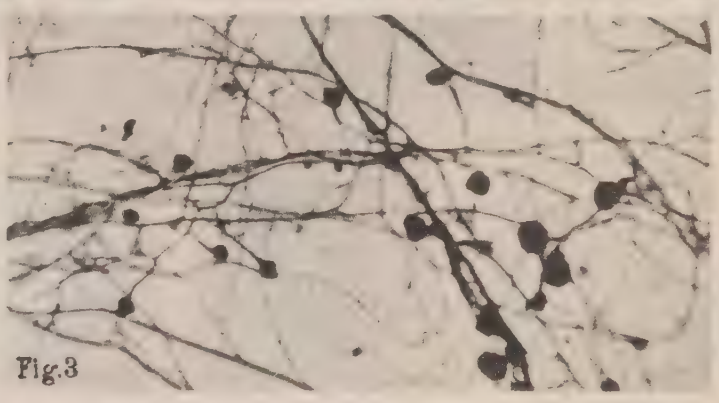

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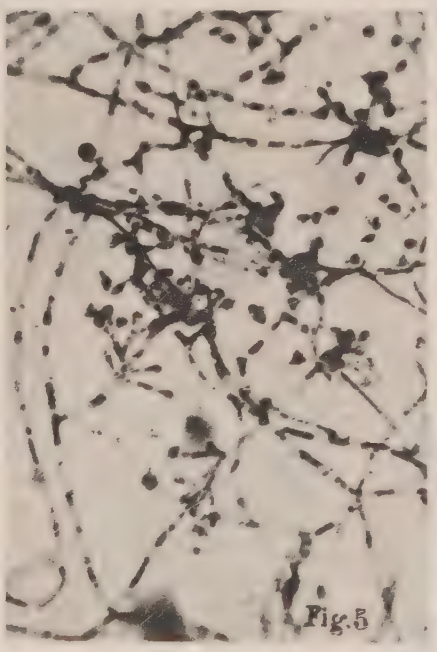

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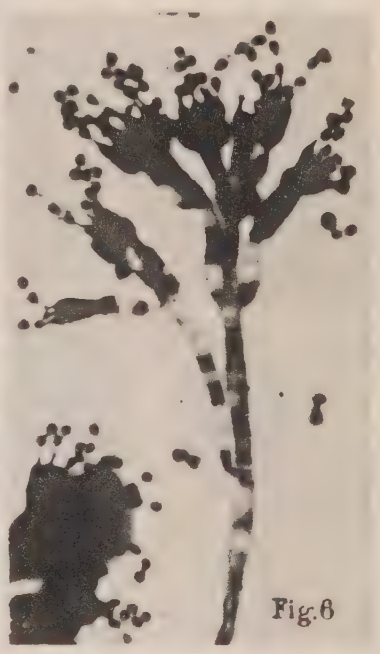

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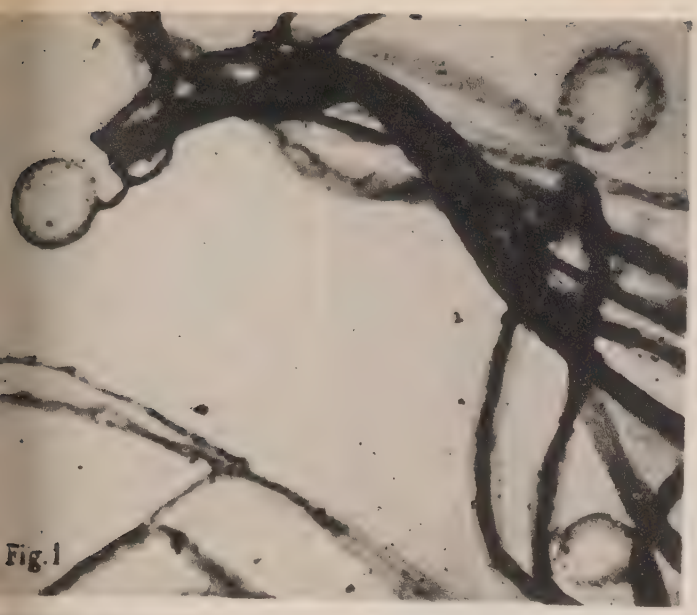
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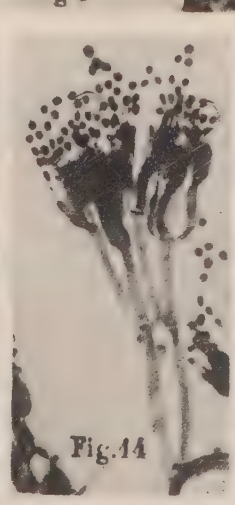
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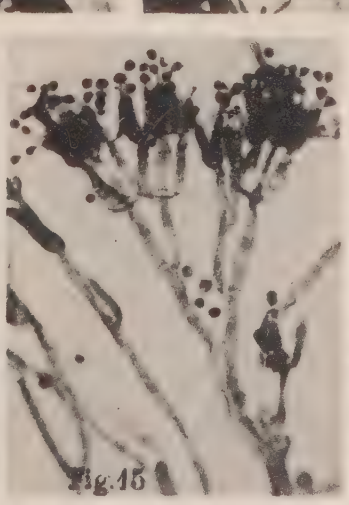
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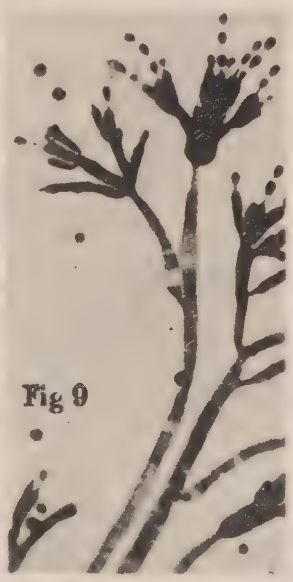
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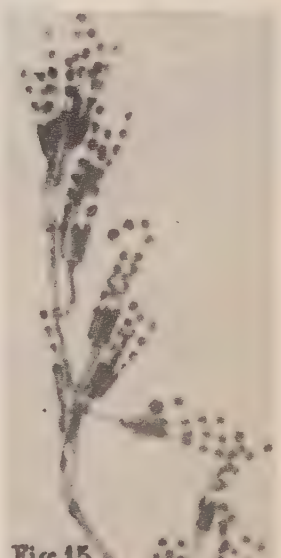
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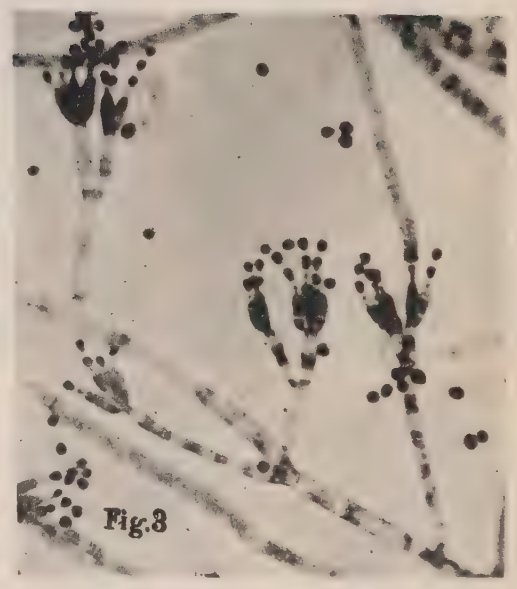

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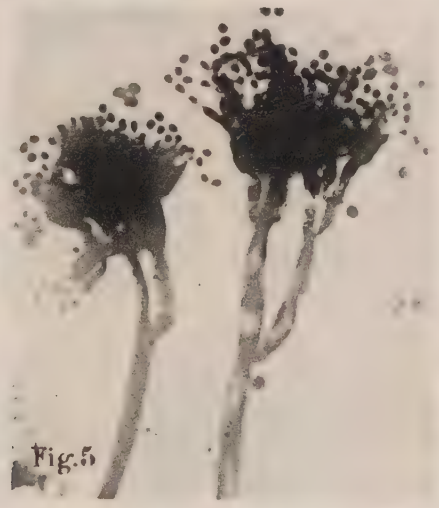

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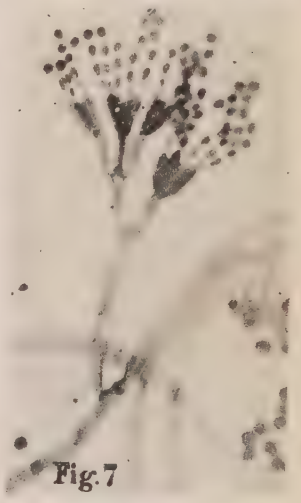

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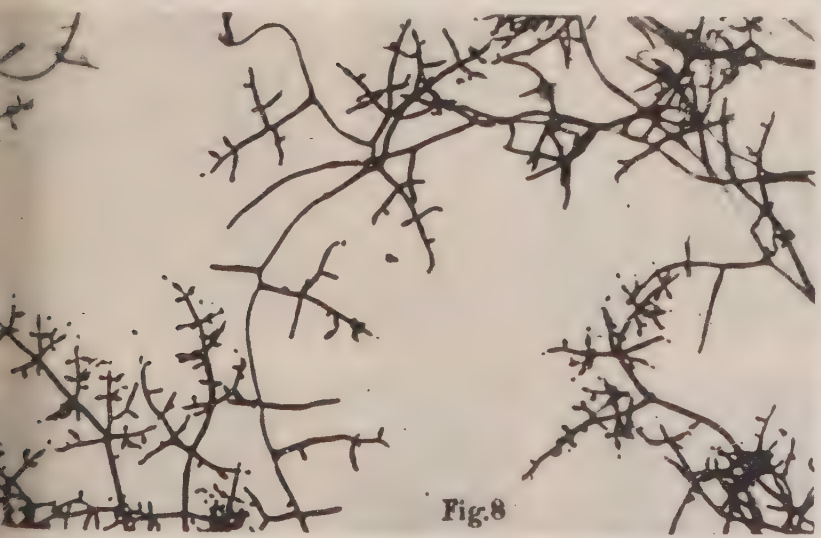

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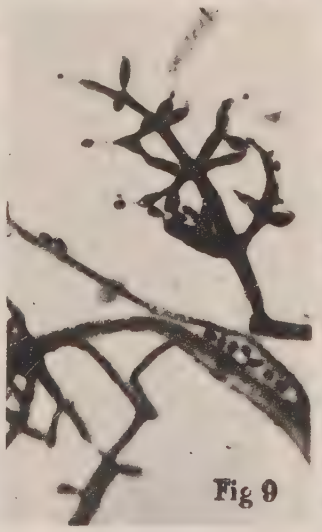

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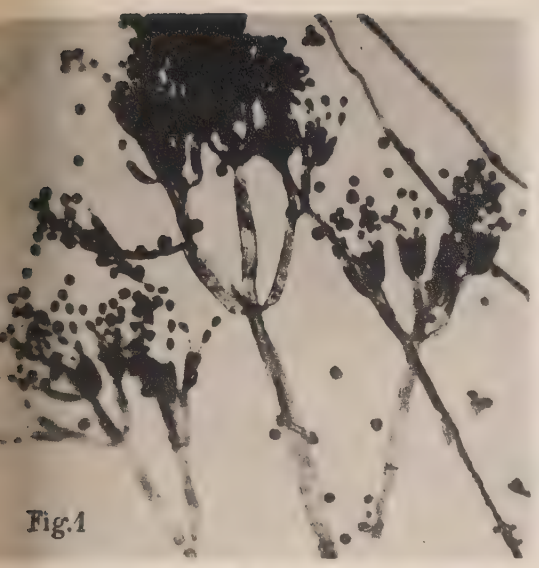
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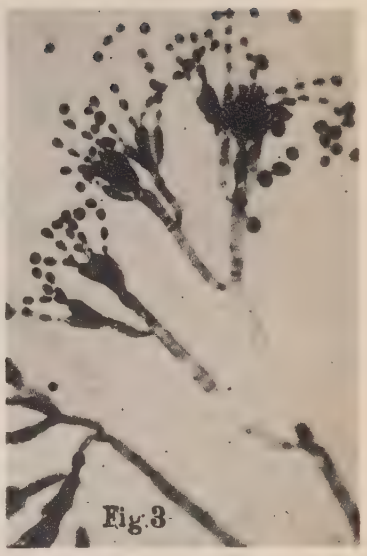
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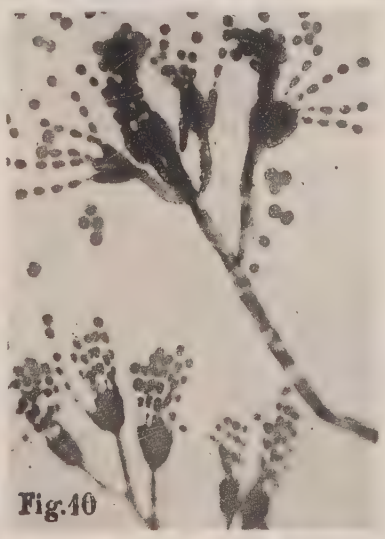
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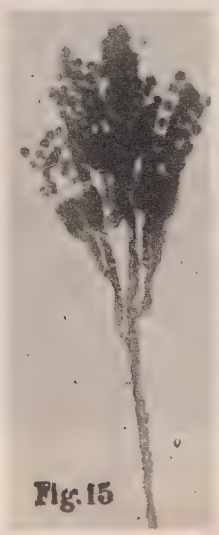
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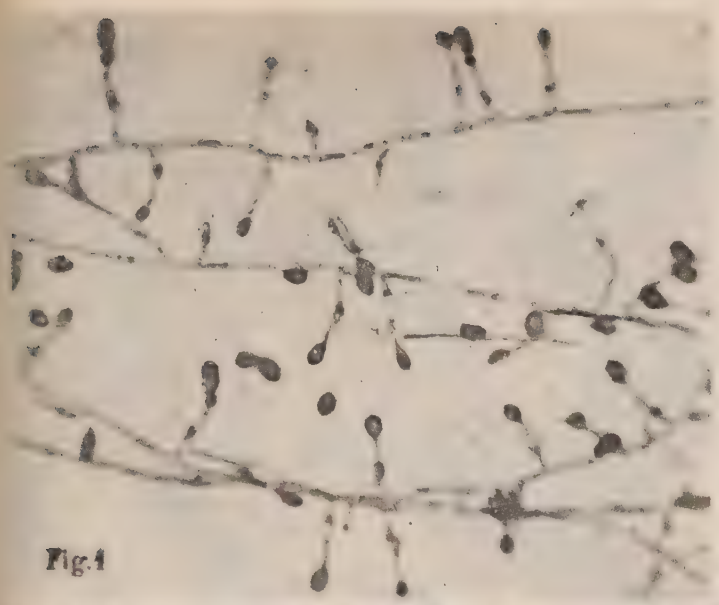

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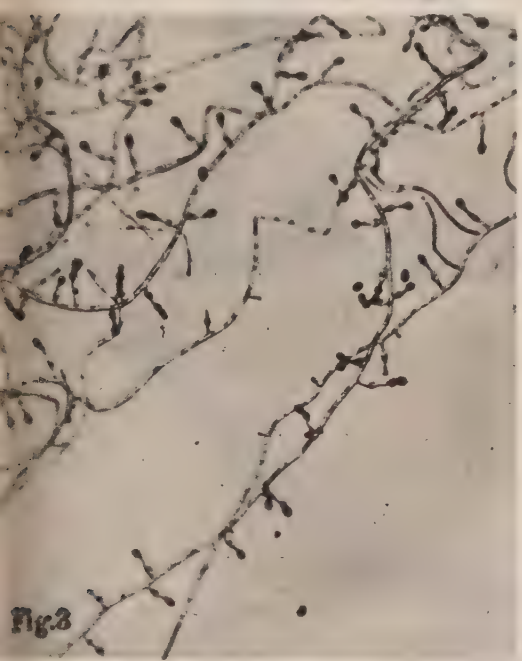

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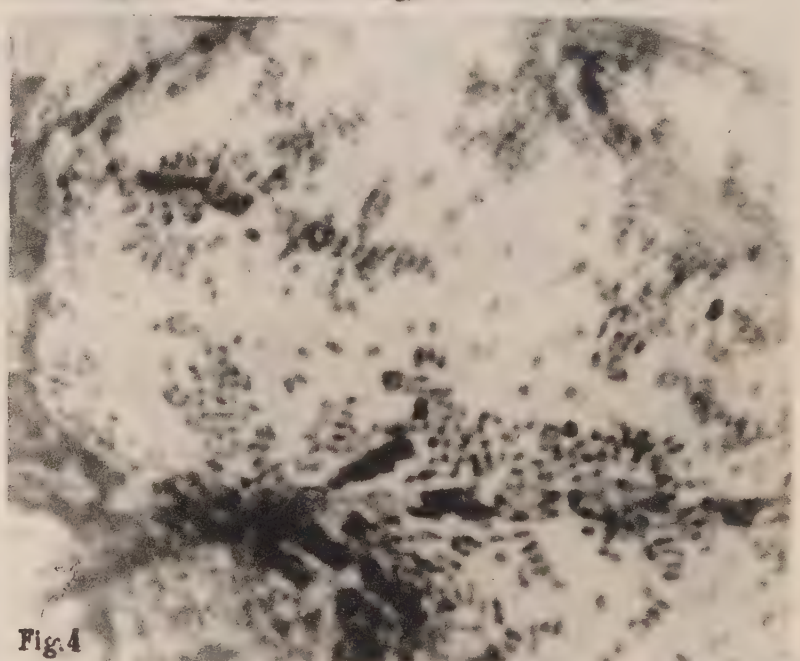

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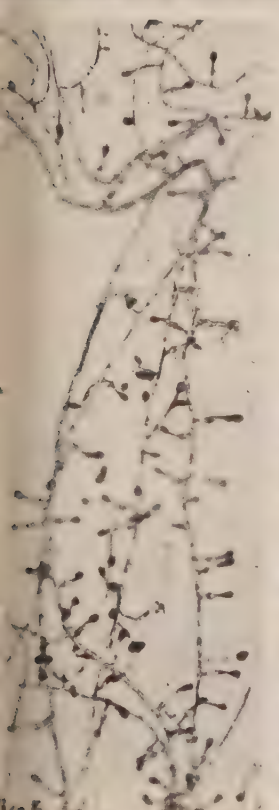

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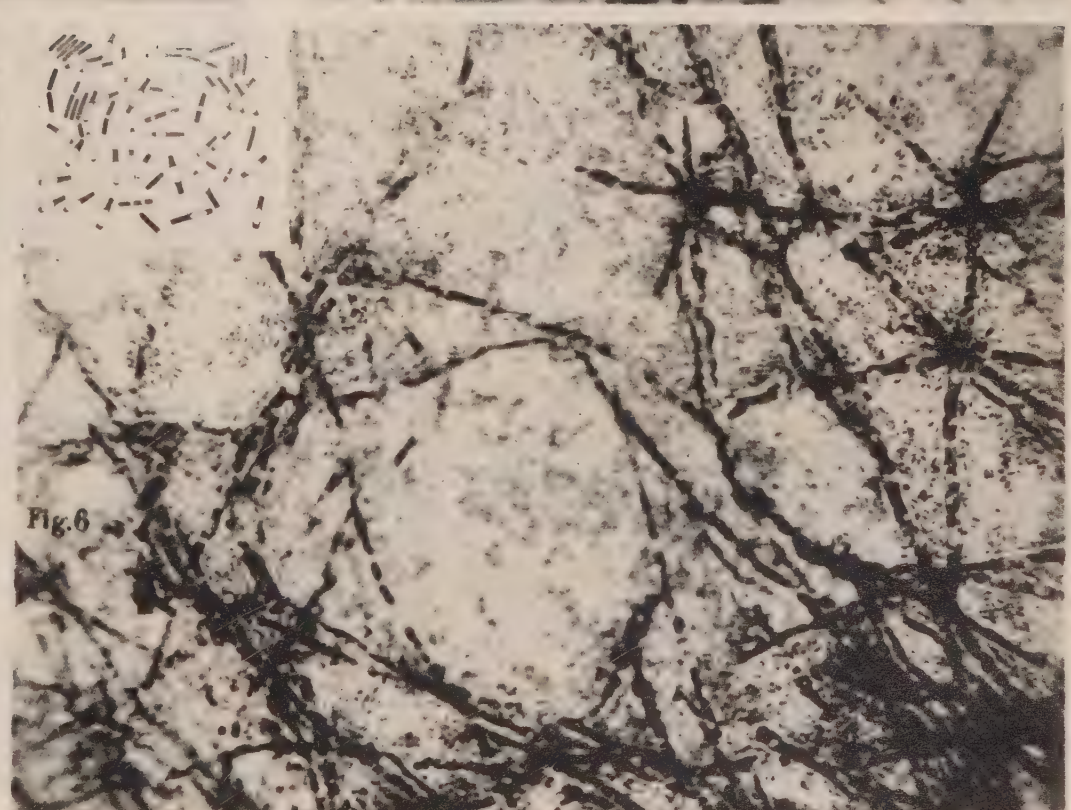

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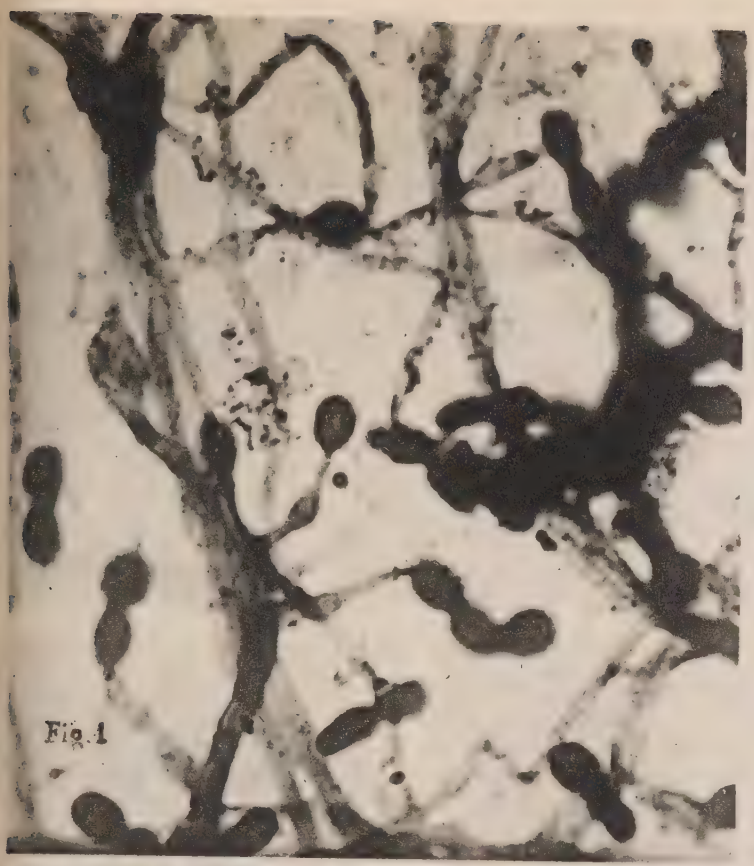

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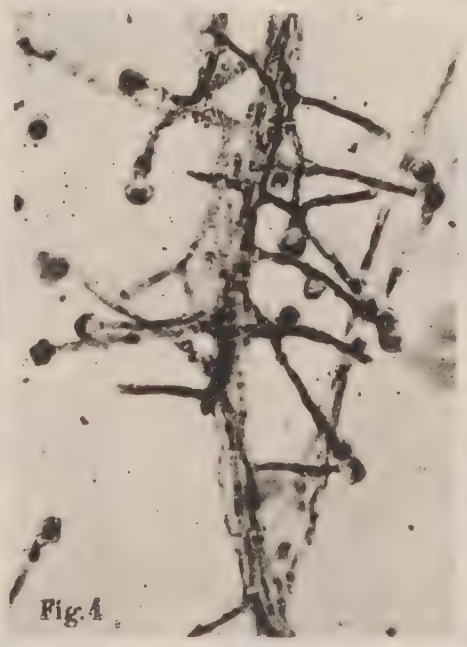

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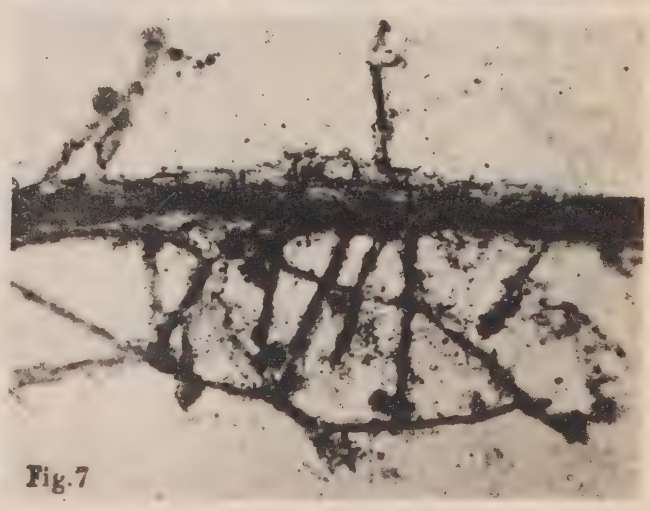

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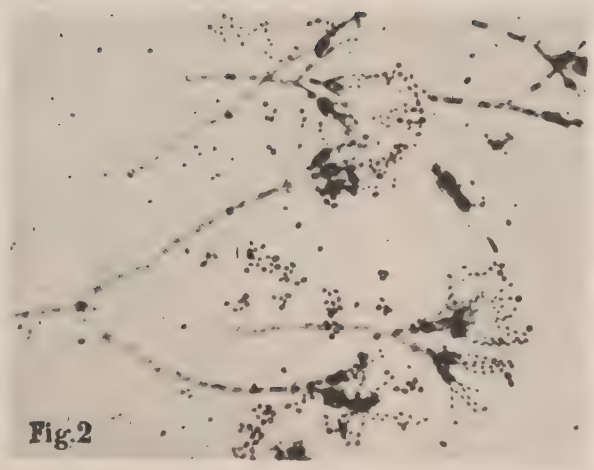
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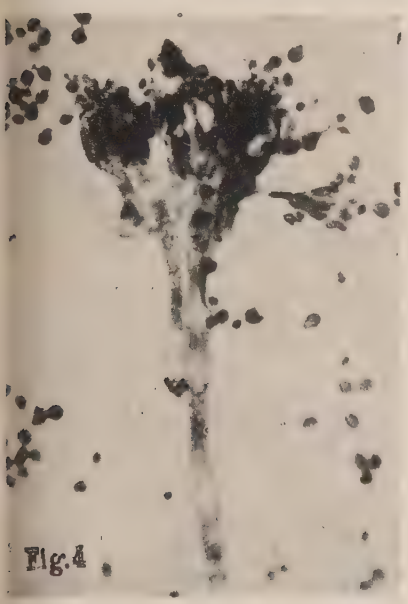
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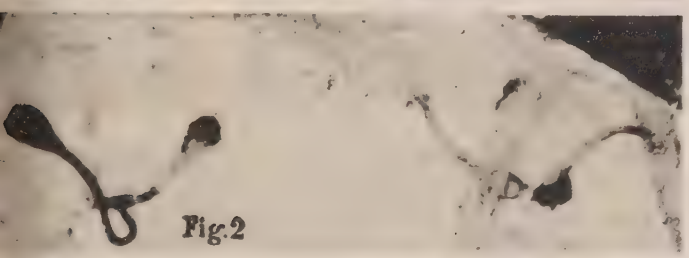

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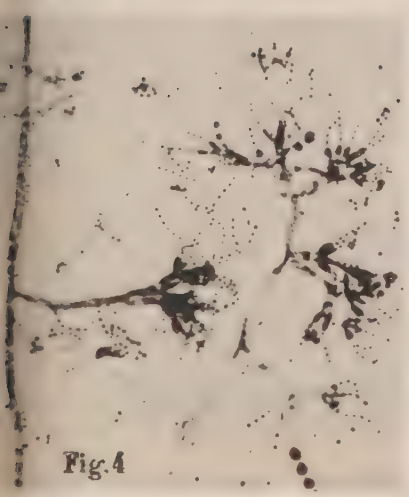

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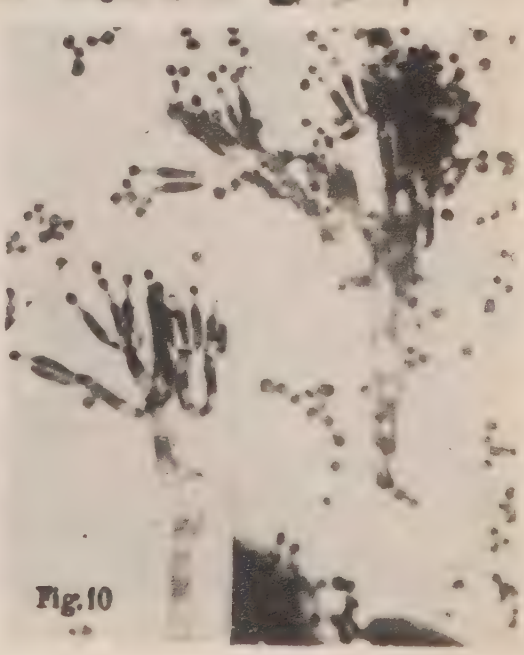

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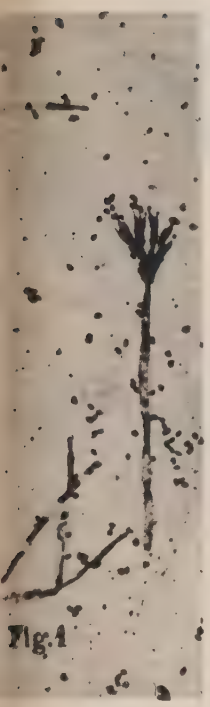

Fig.1

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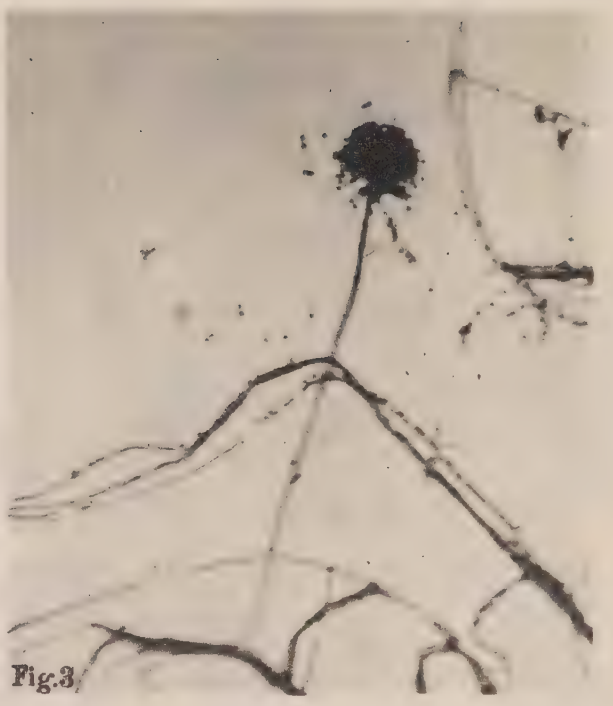

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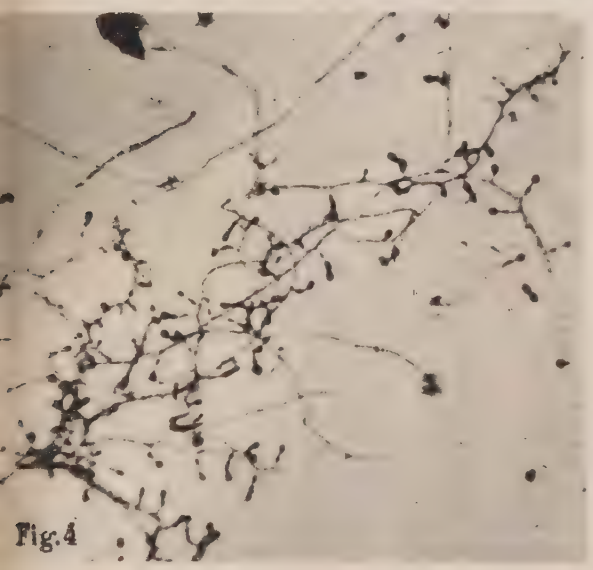

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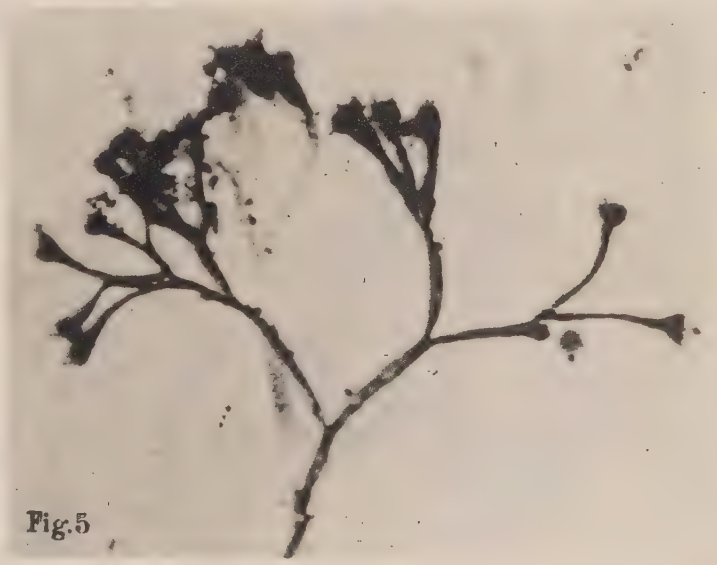

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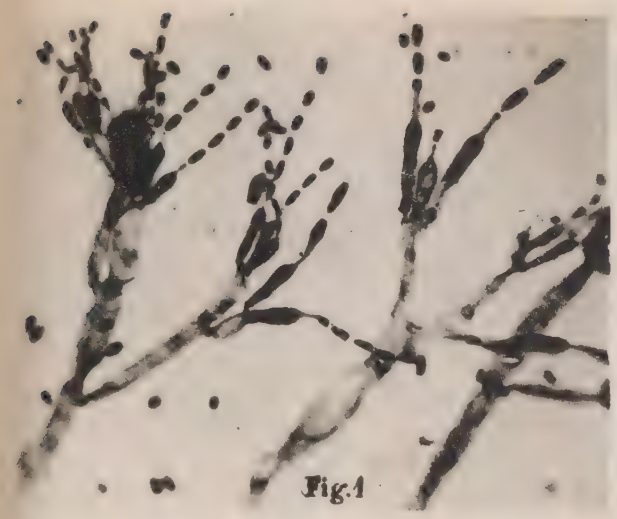
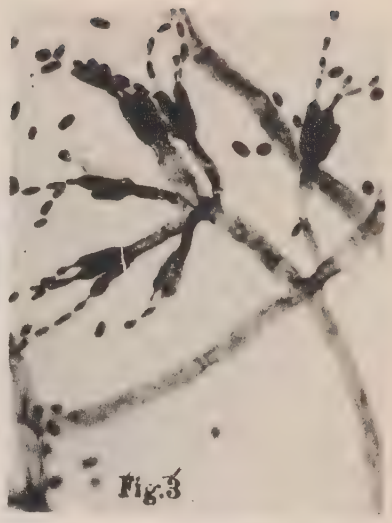


Fig.1

Fig.2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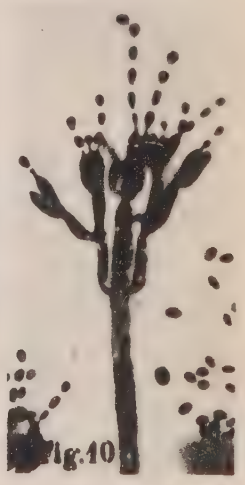
Fig.10

Fig.11

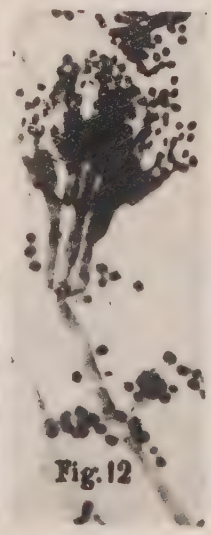
Fig.12

Fig.13

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Fig.16

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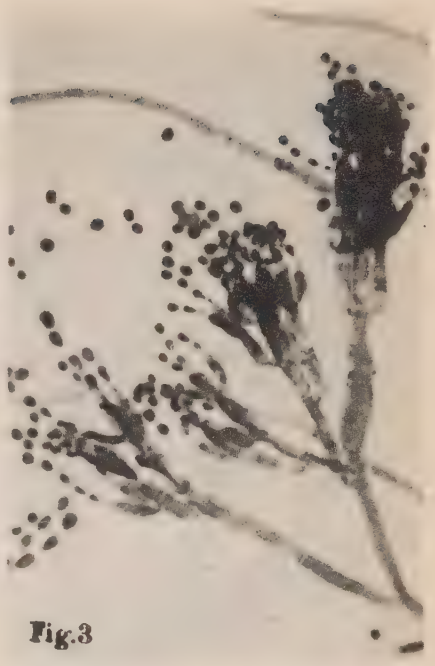
Fig.2



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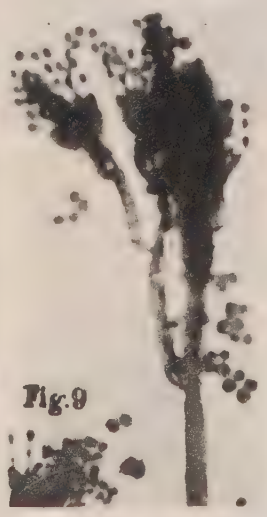

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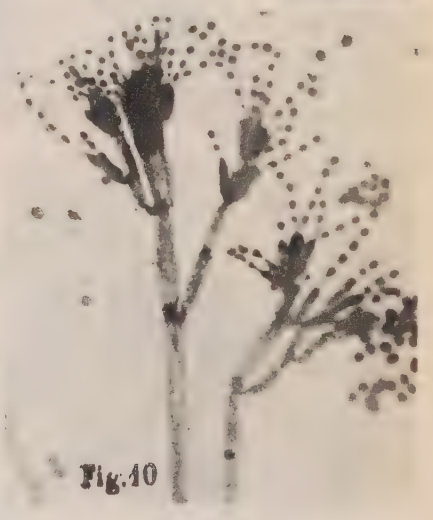

Fig.10

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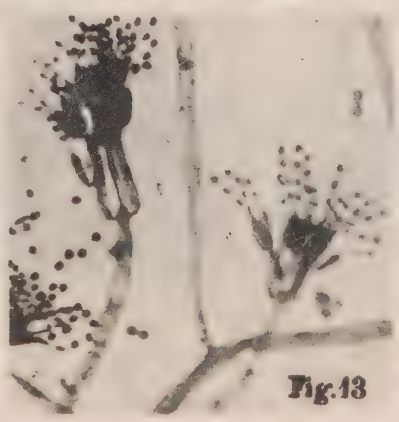

Fig.13

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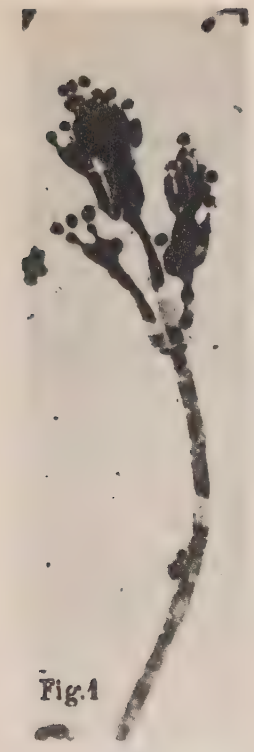

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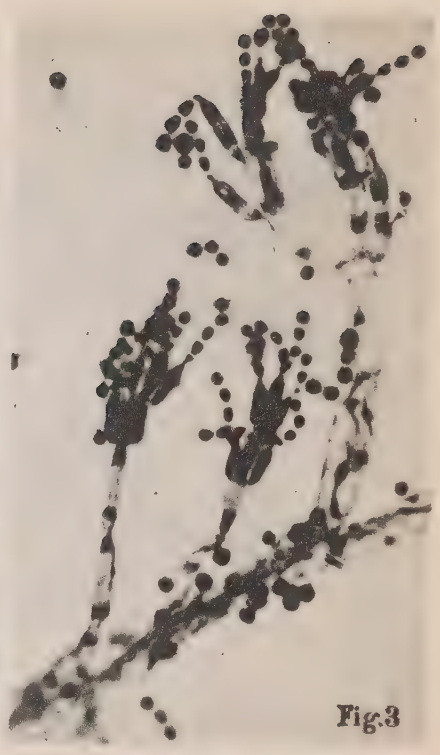

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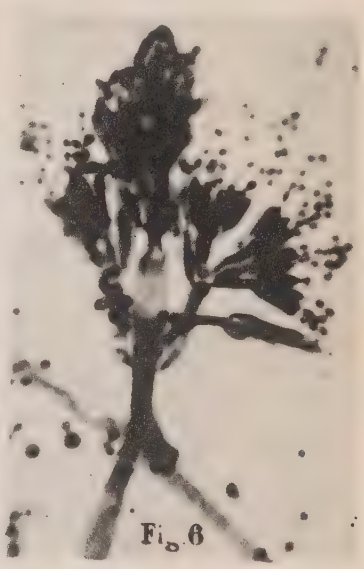

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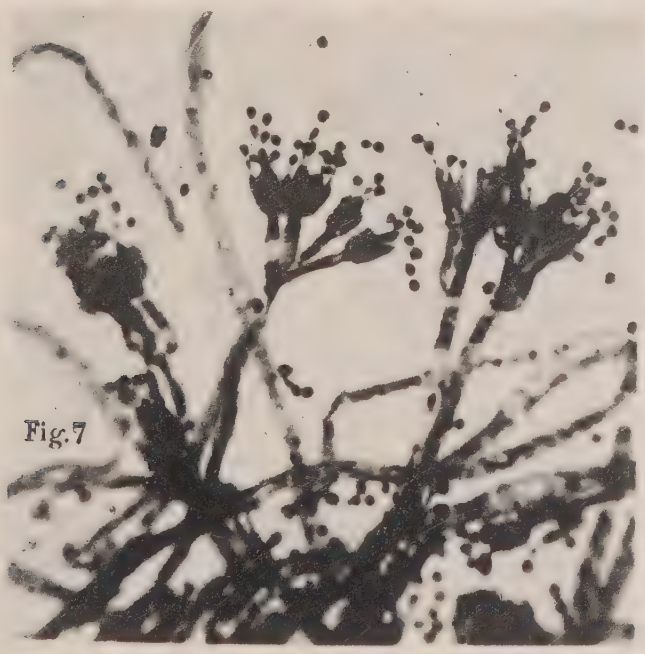

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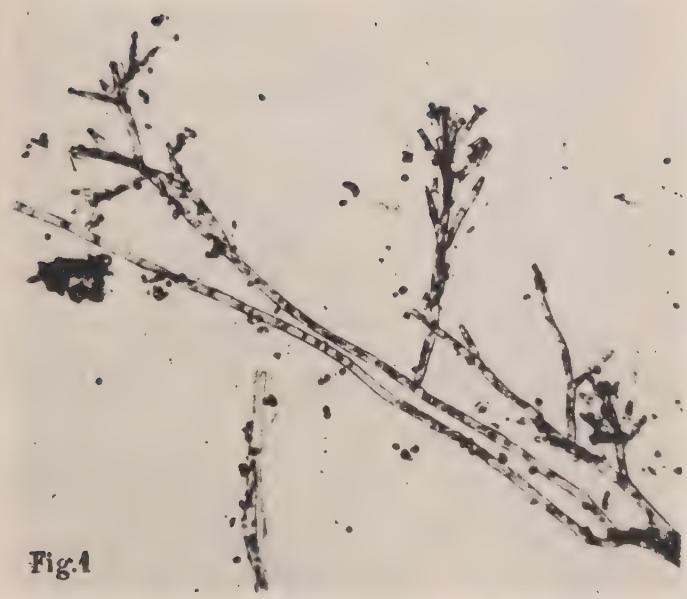

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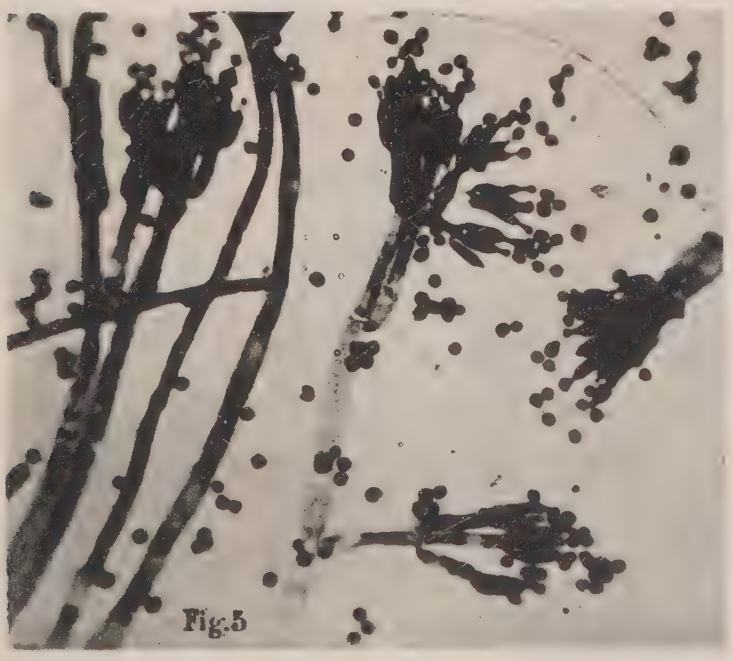

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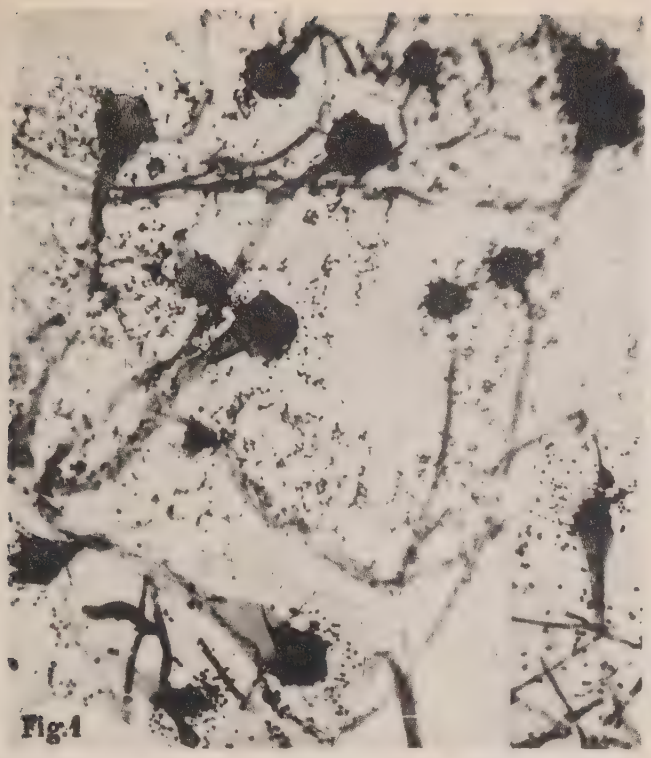

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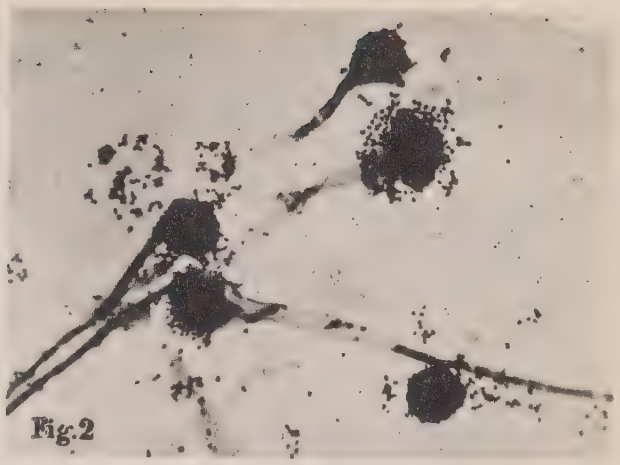

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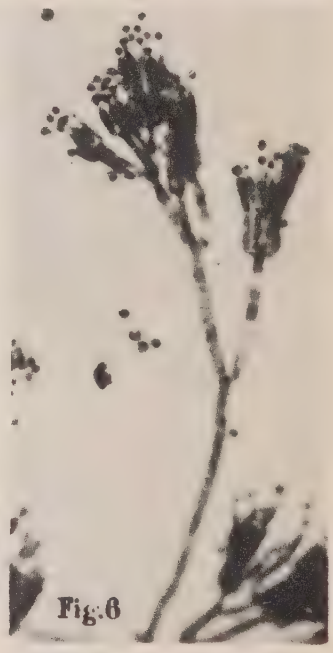

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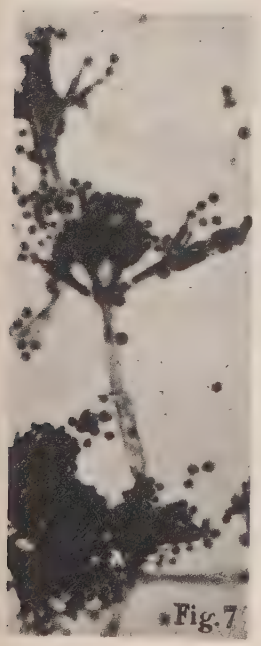

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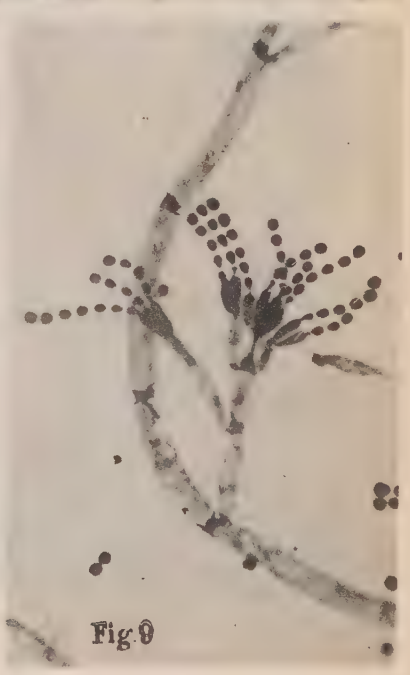
Fig.9

Fig. 1

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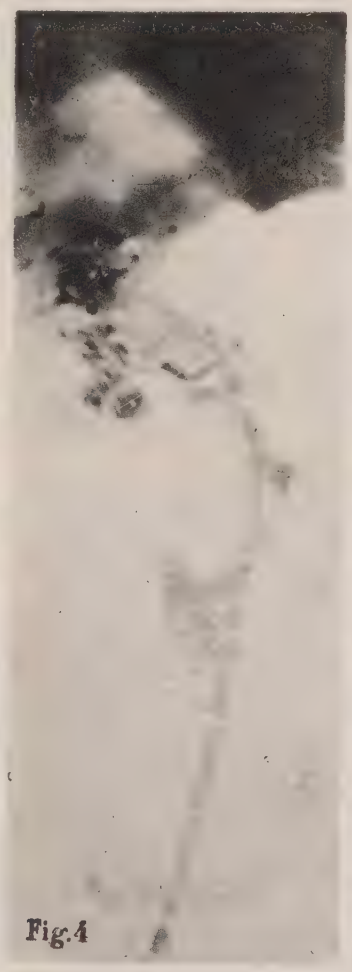

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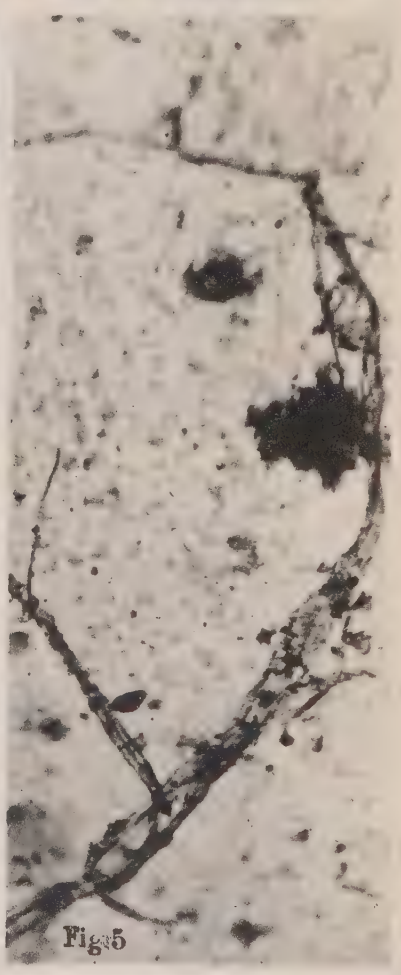

Fig. 5

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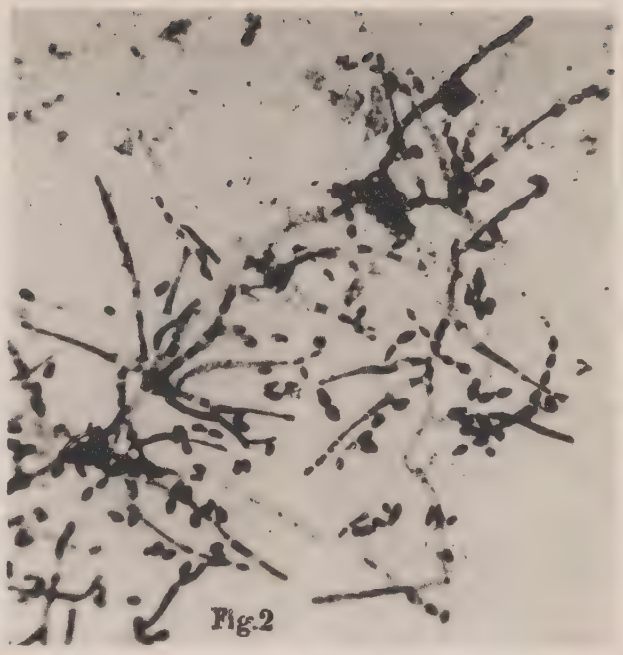

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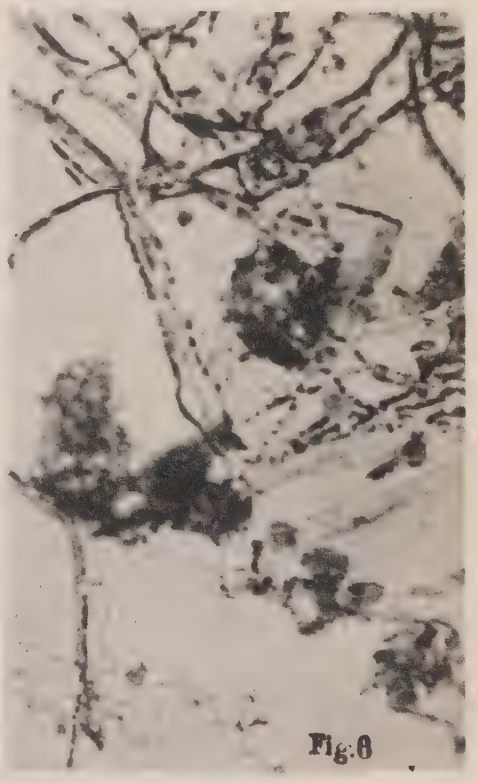

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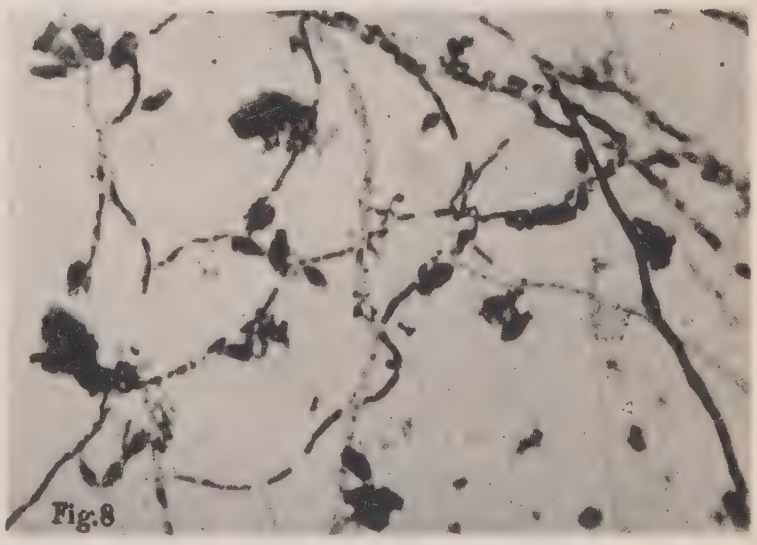
Fig.7



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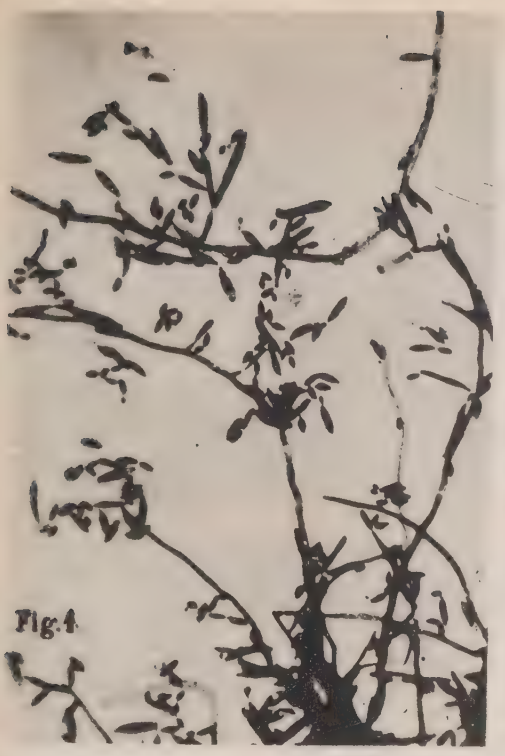

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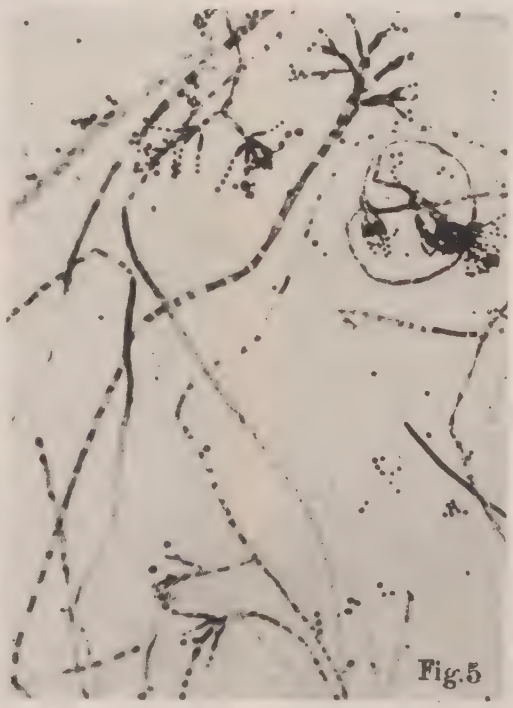

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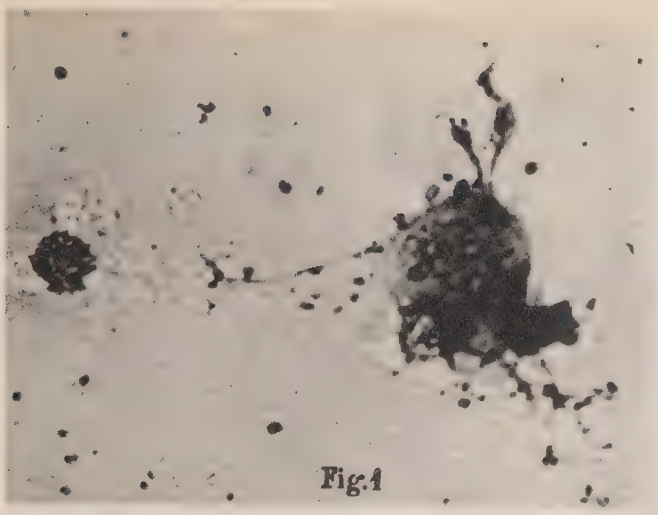

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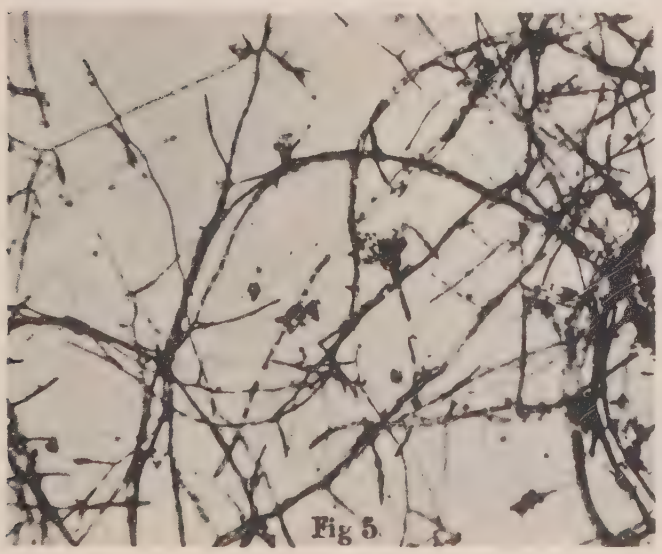

Fig 5.

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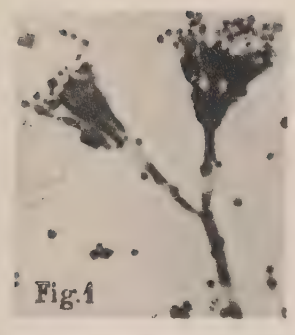
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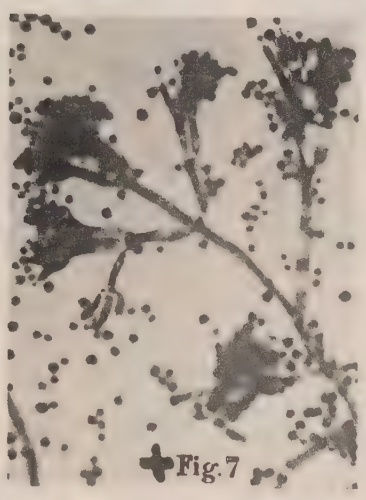
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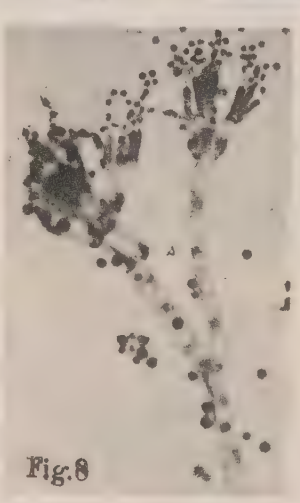
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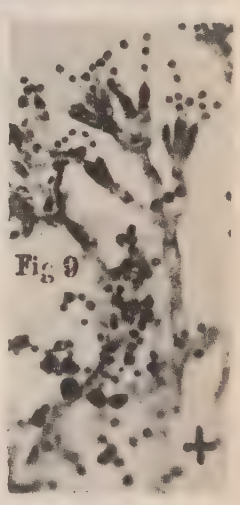
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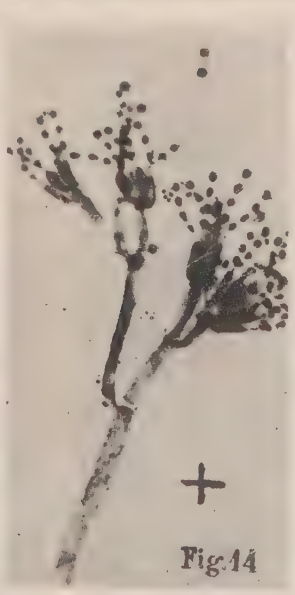
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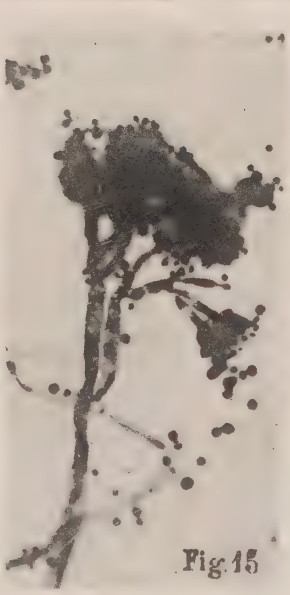
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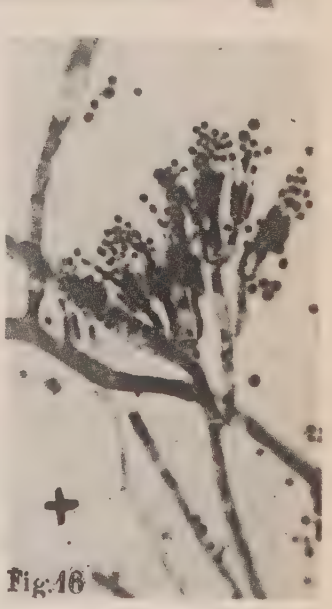
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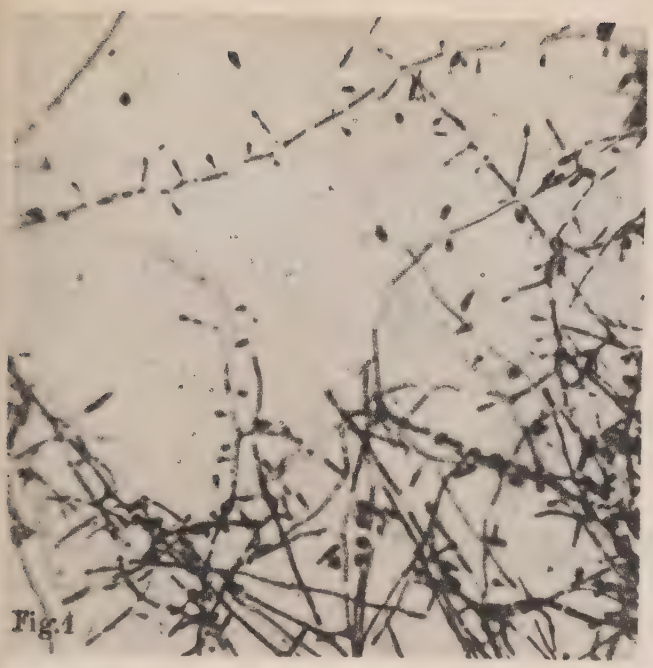
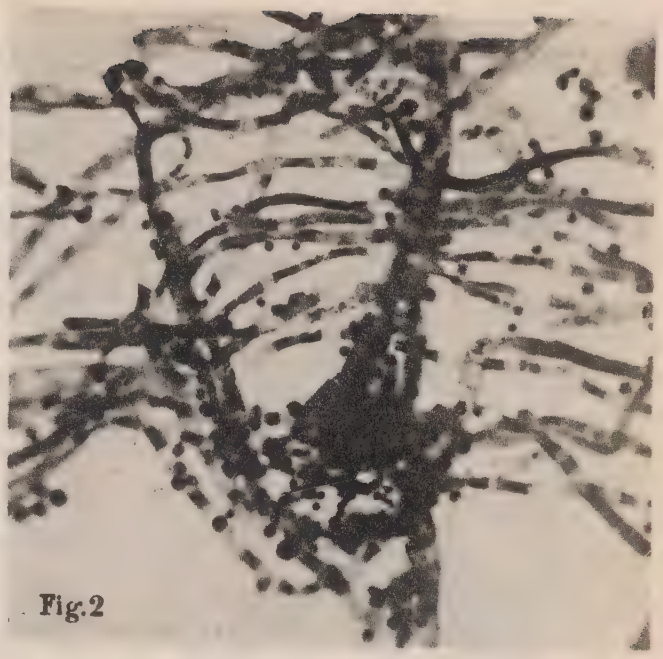


Fig.1



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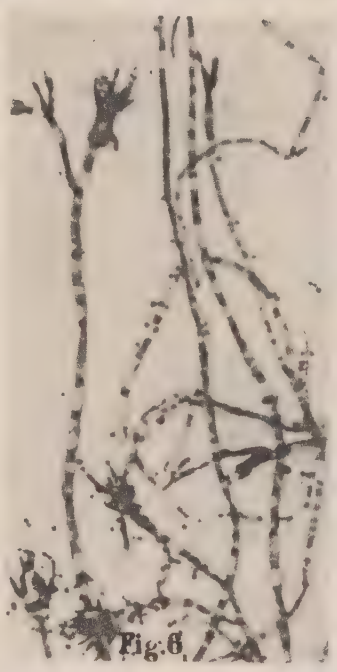

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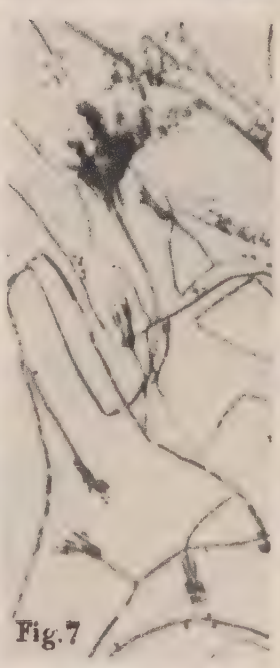

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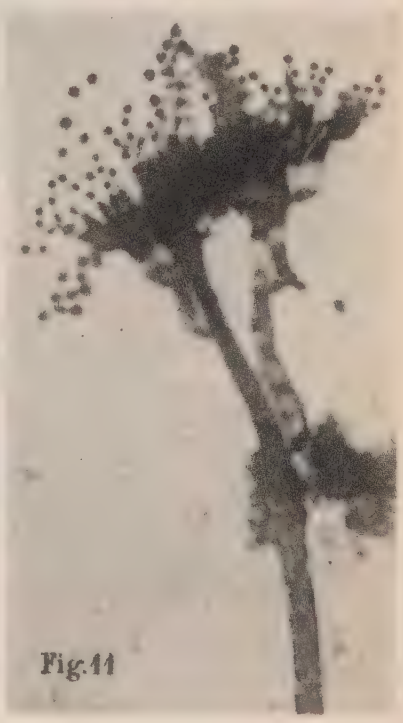

Fig.11

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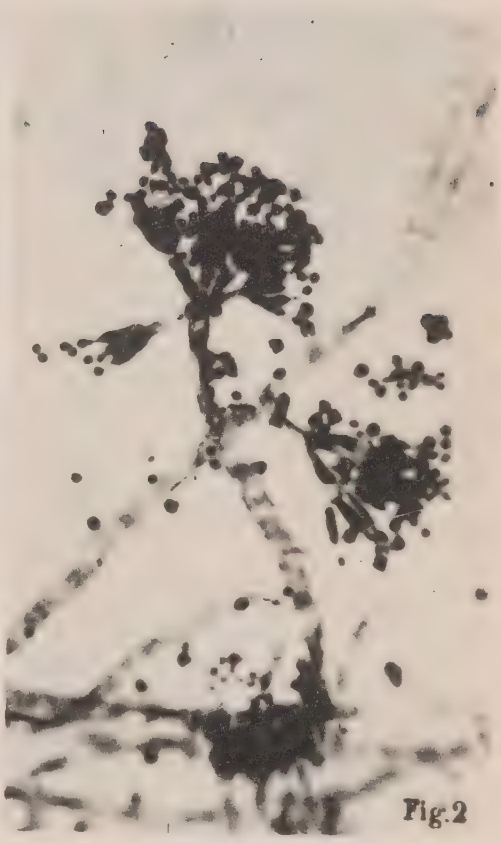

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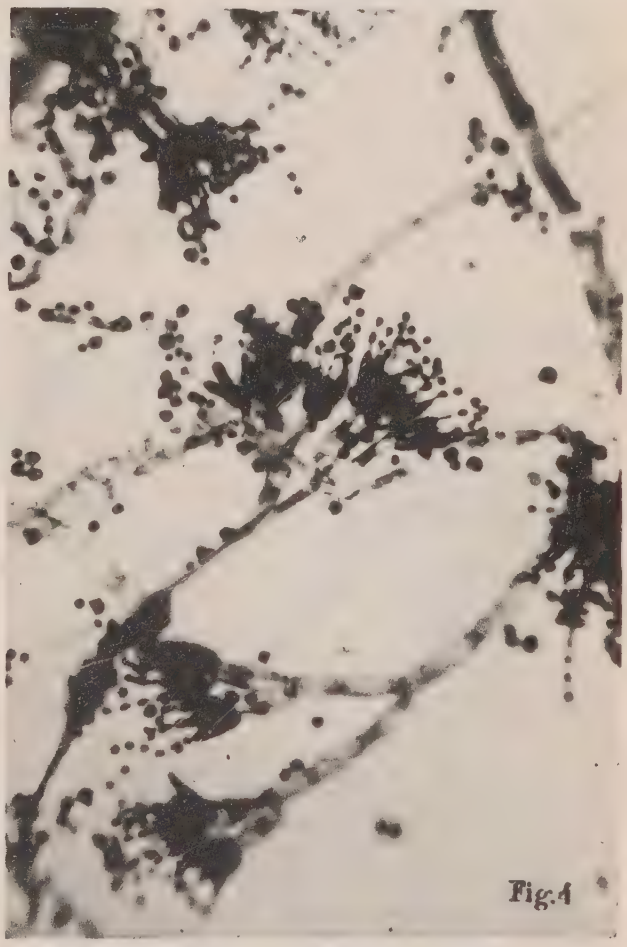

Fig.4

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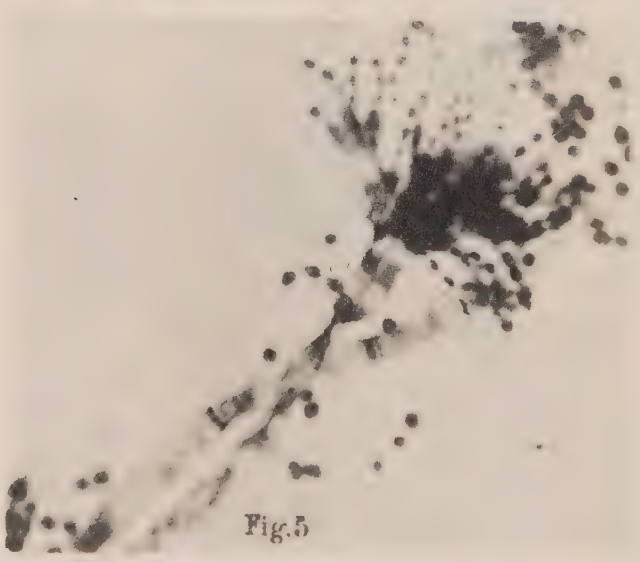

Fig.5

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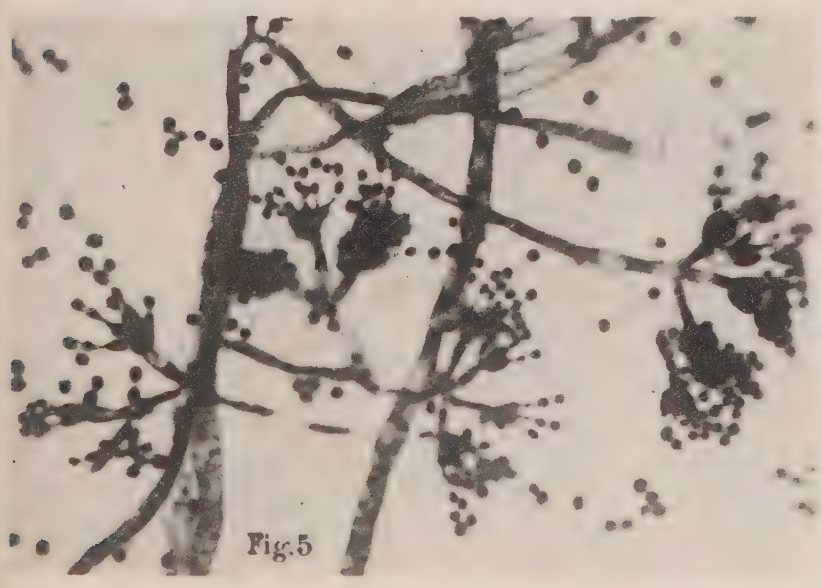

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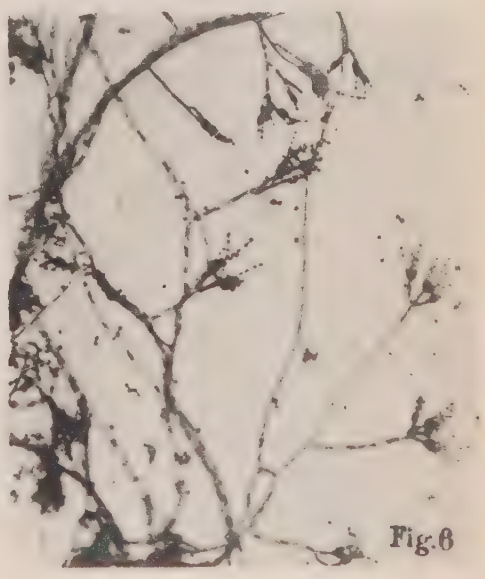

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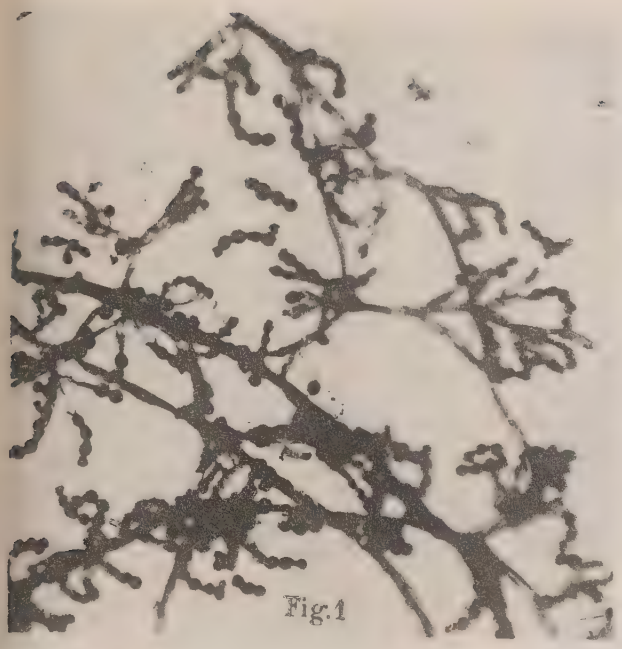

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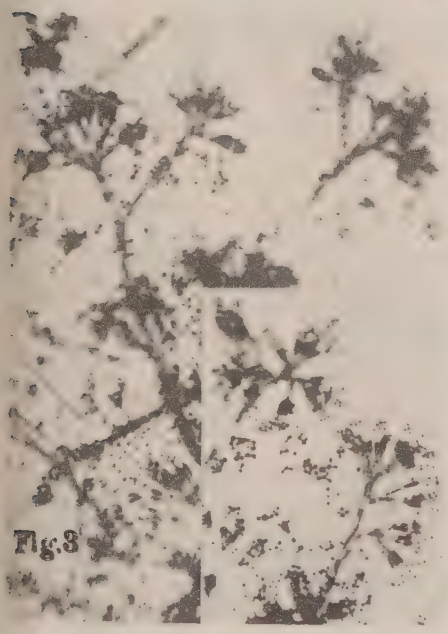

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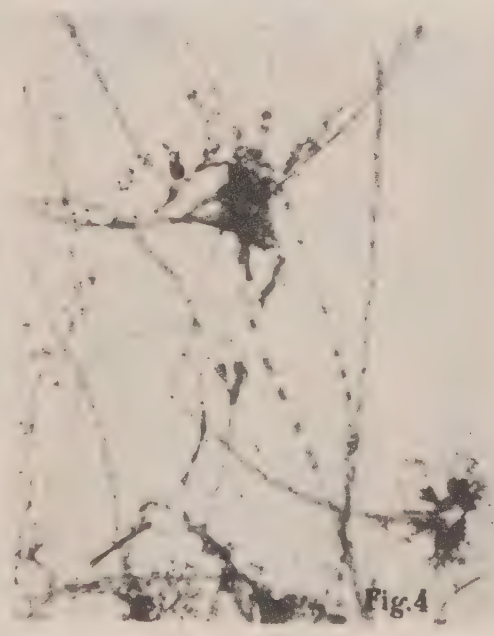

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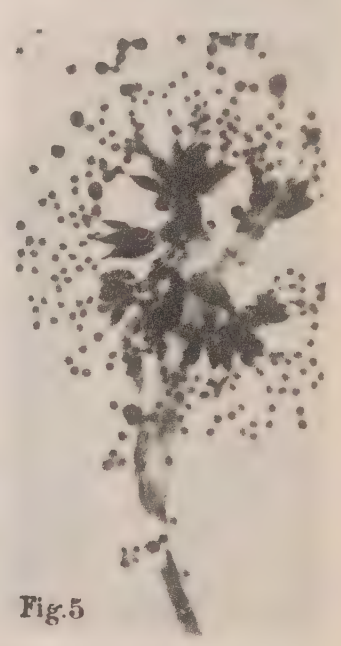

Fig.5

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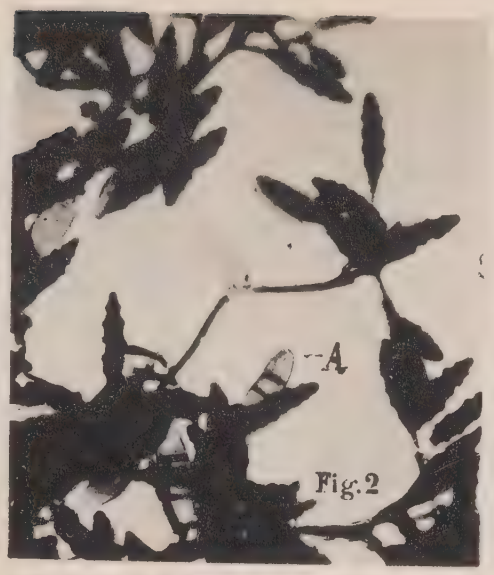
Fig.1



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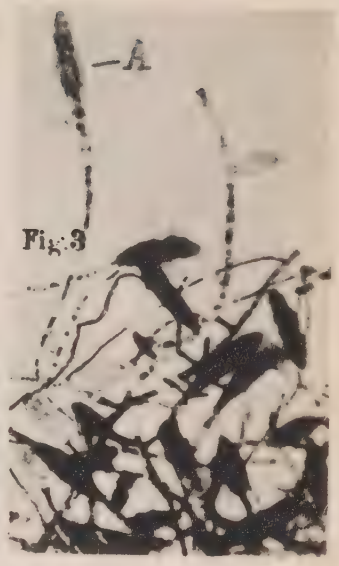

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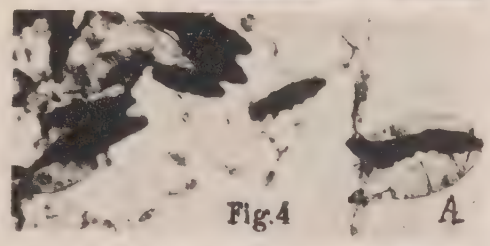
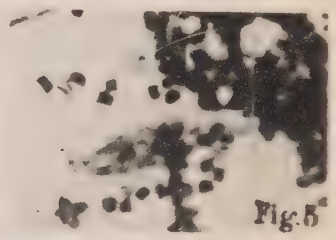


Fig.4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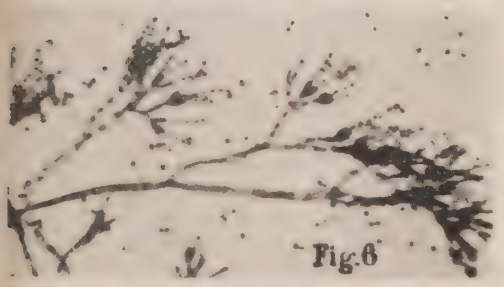
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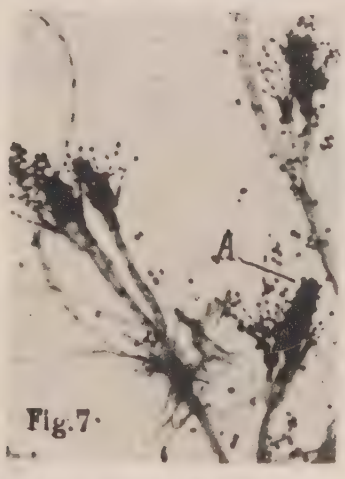

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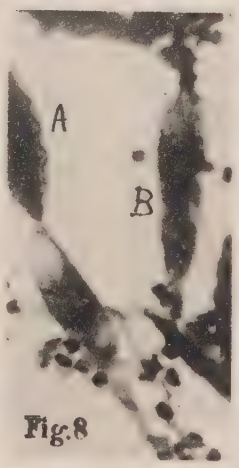

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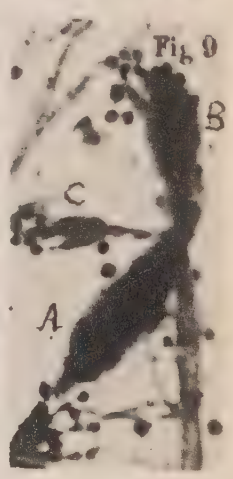

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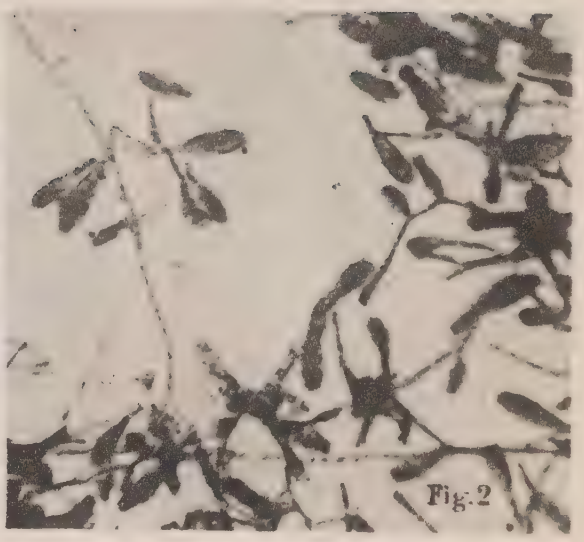
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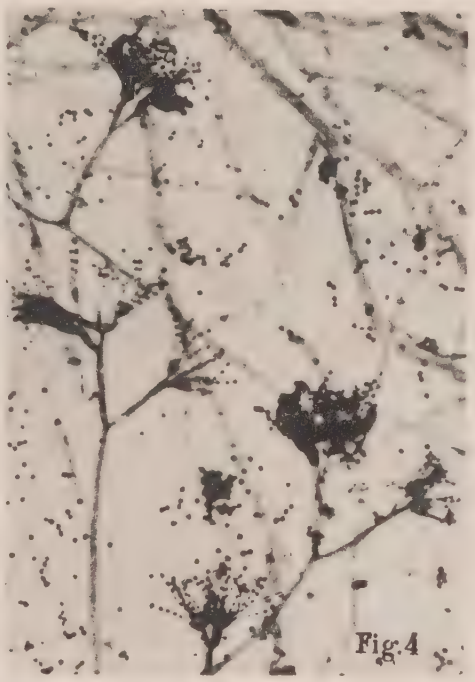
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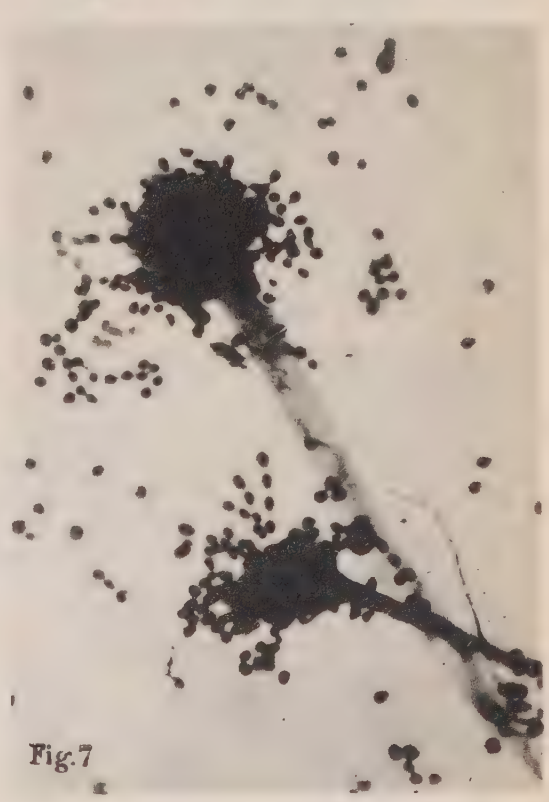

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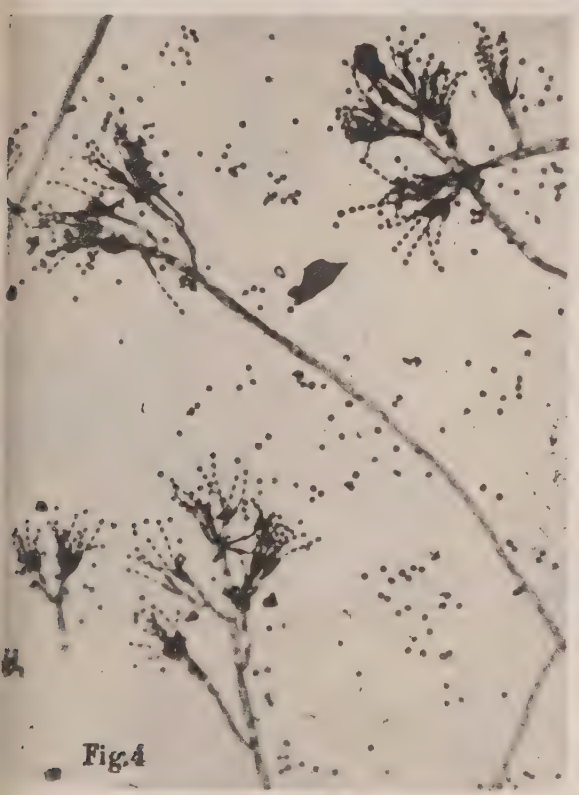

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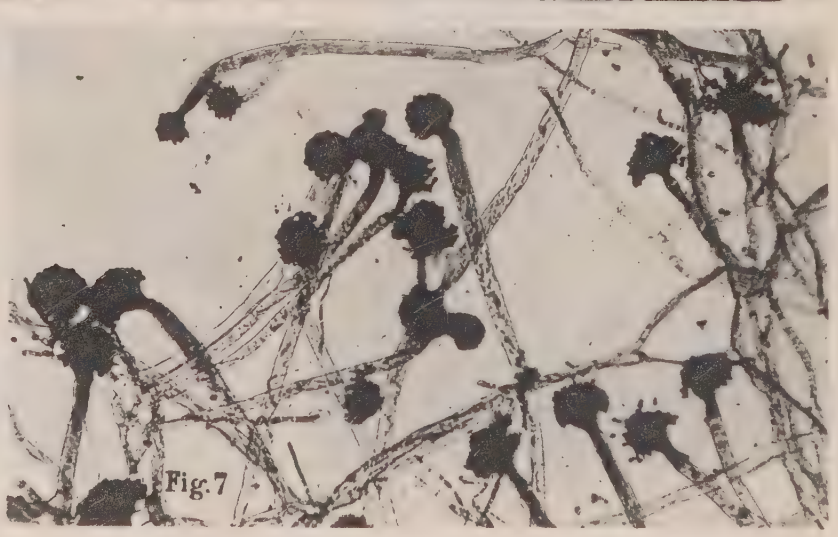

Fig.7

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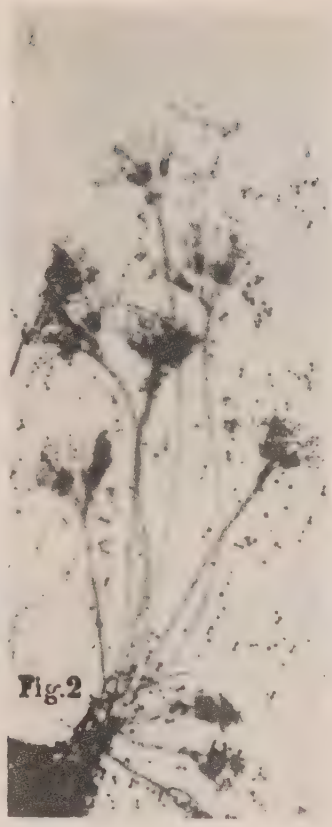

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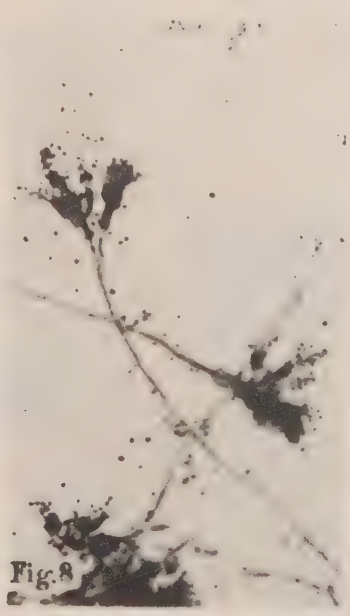

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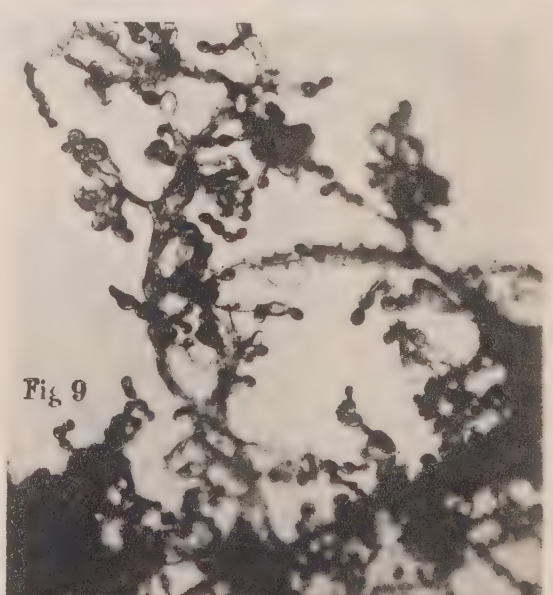

Fig.9

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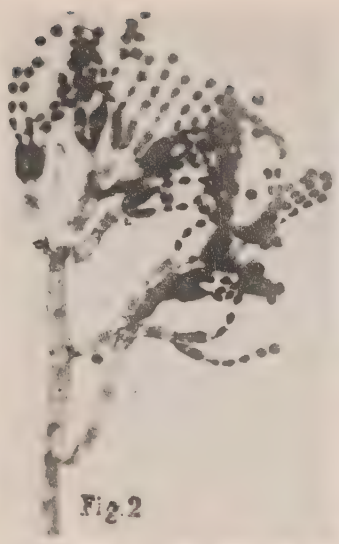

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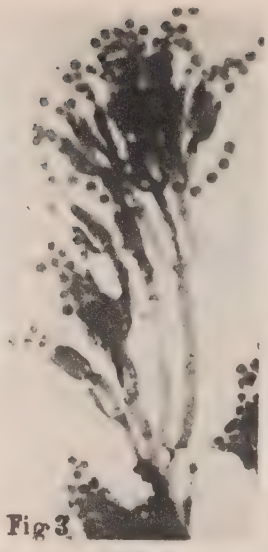

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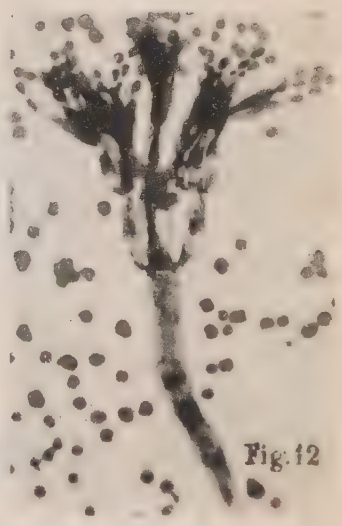

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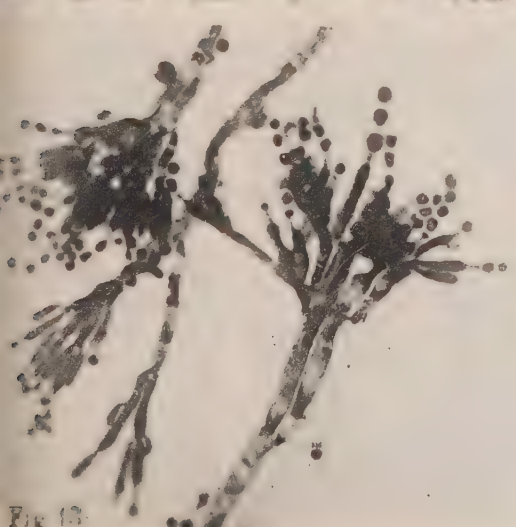

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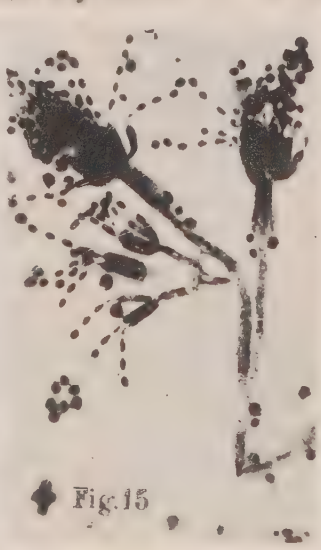

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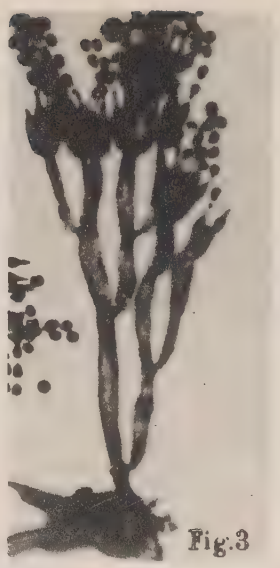
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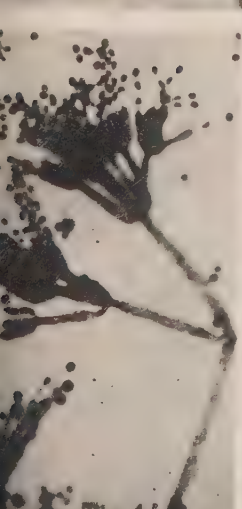
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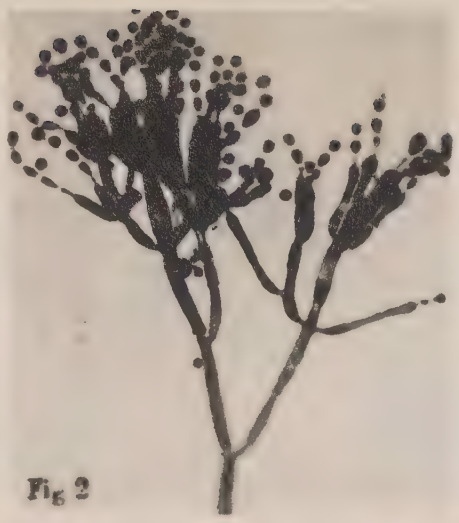
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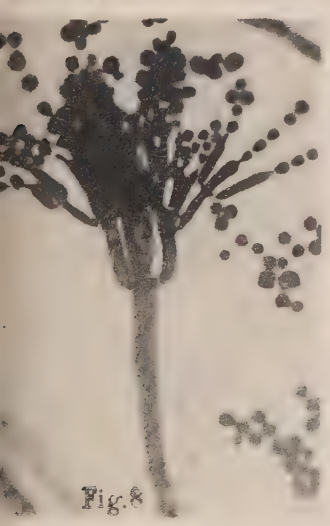
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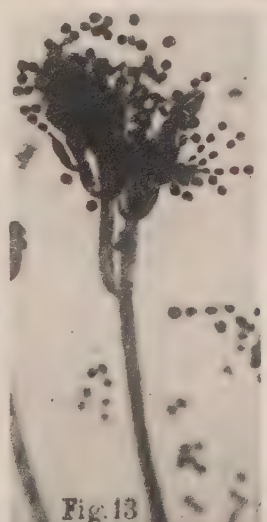
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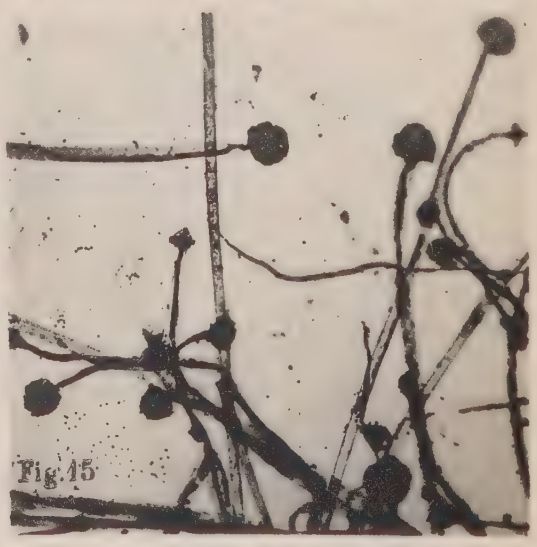
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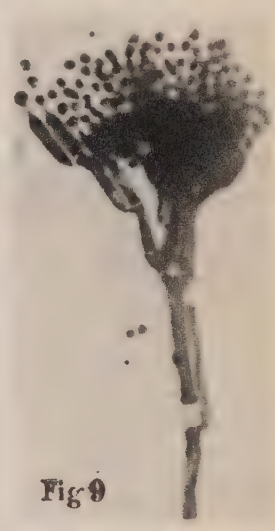

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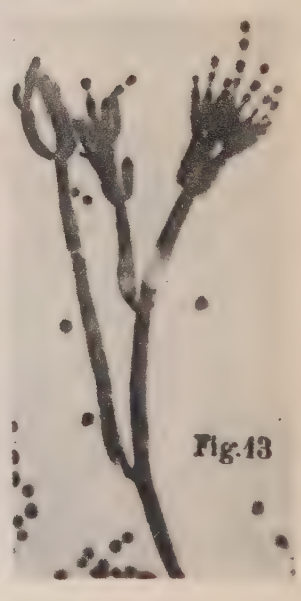

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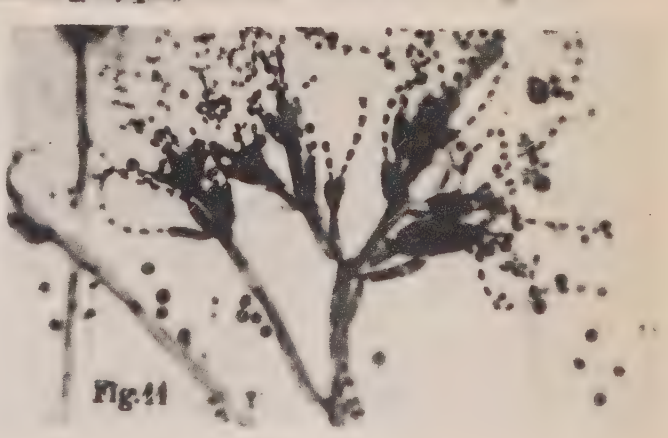

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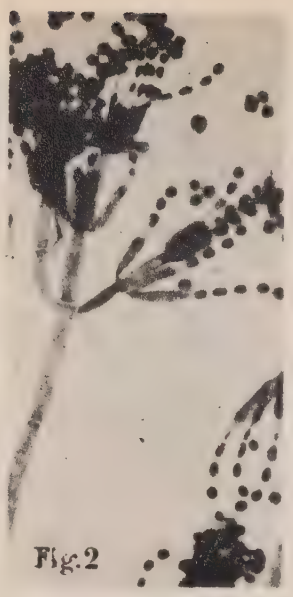

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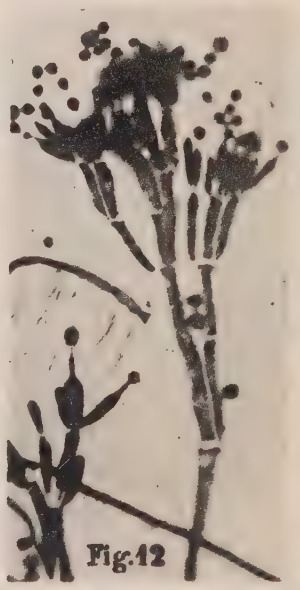

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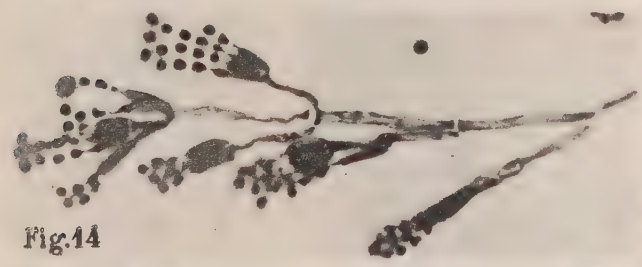

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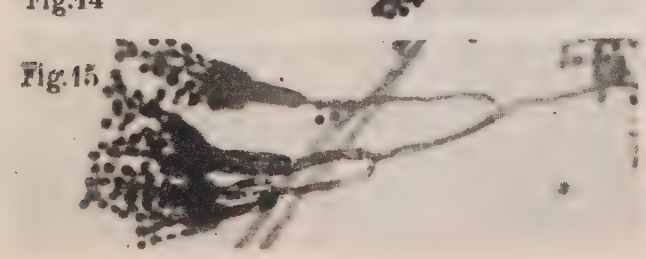

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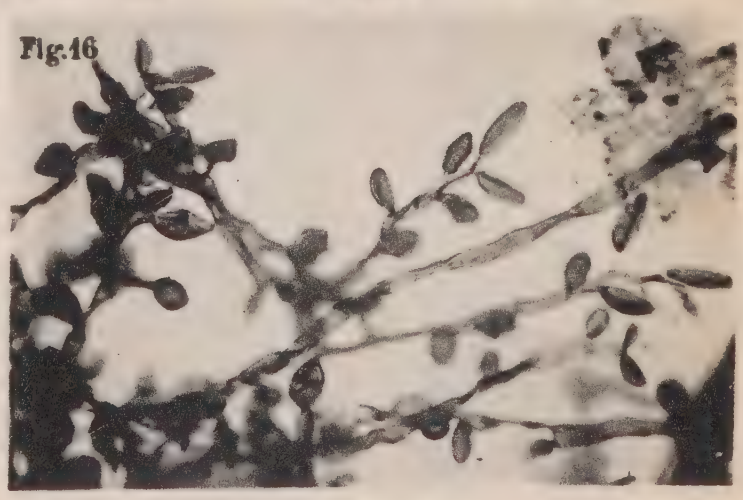

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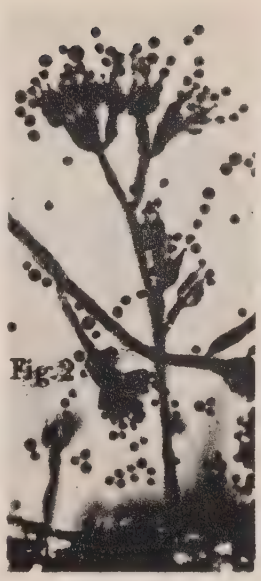
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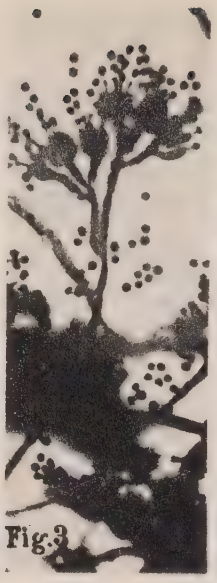
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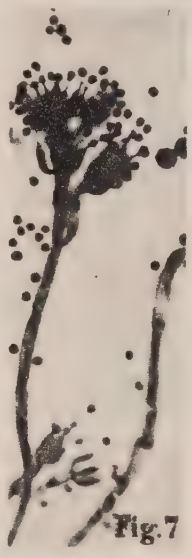
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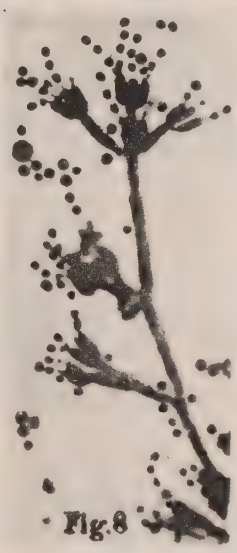
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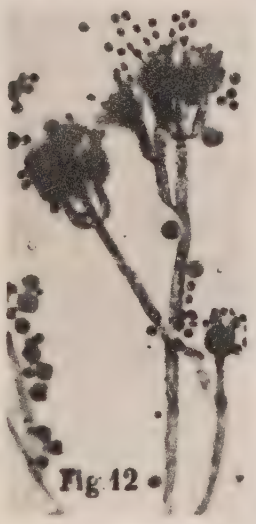
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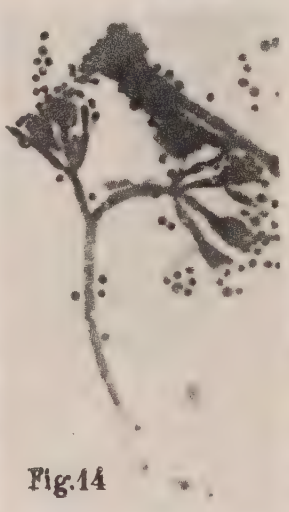
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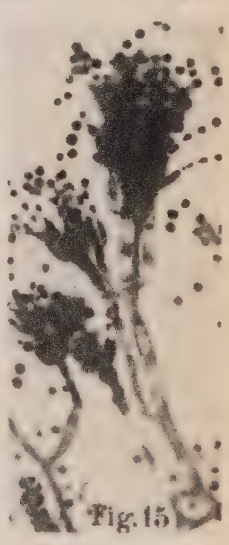
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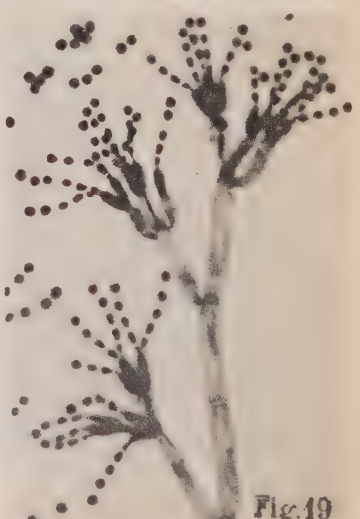
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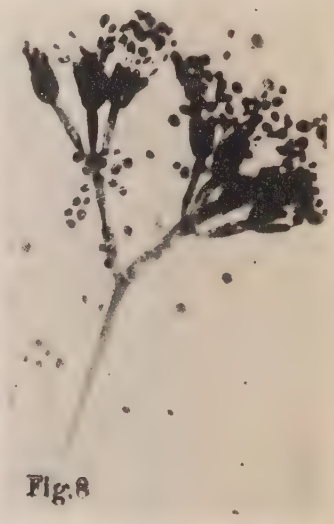
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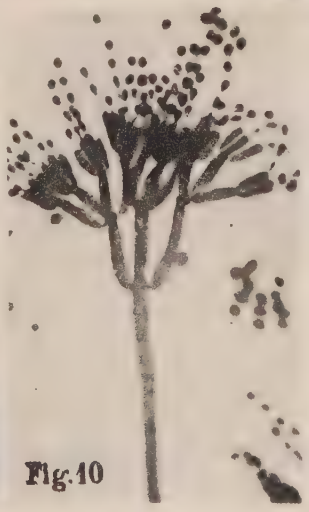
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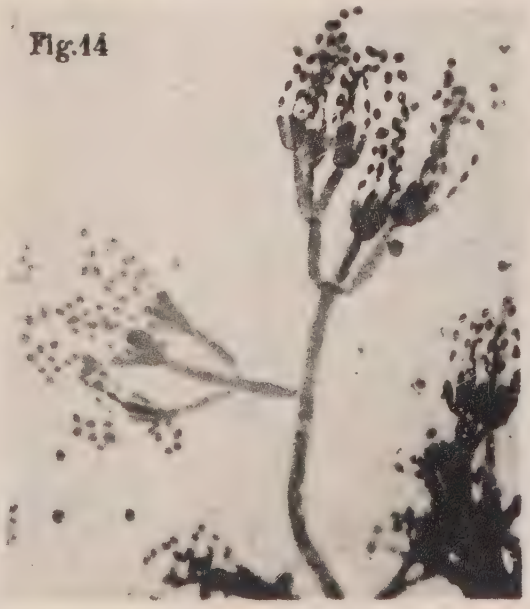
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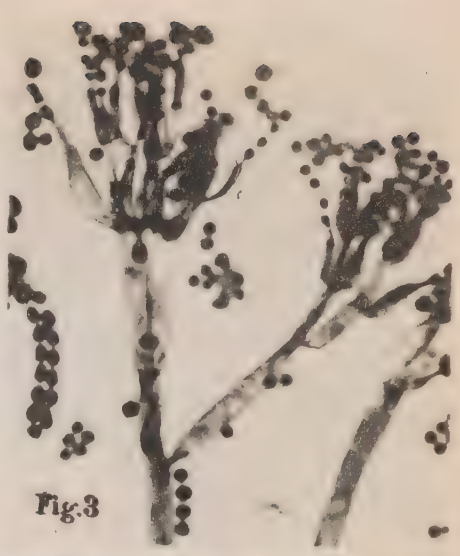

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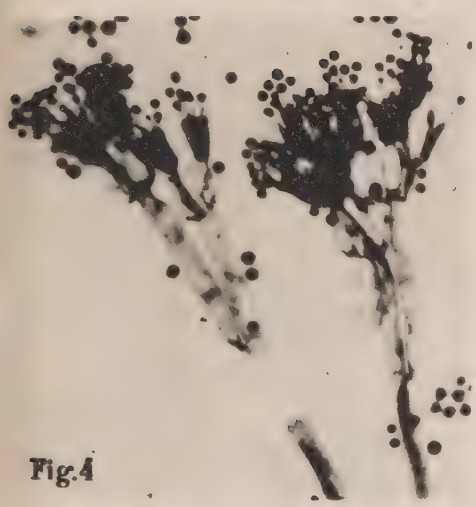

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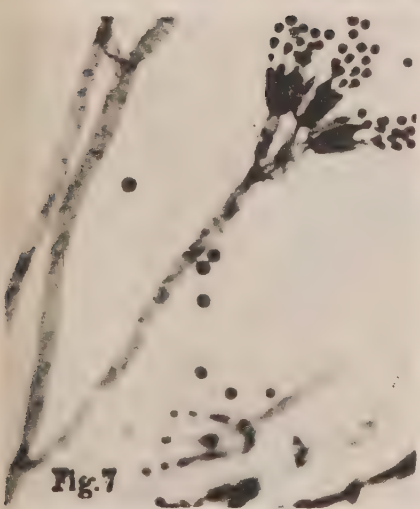

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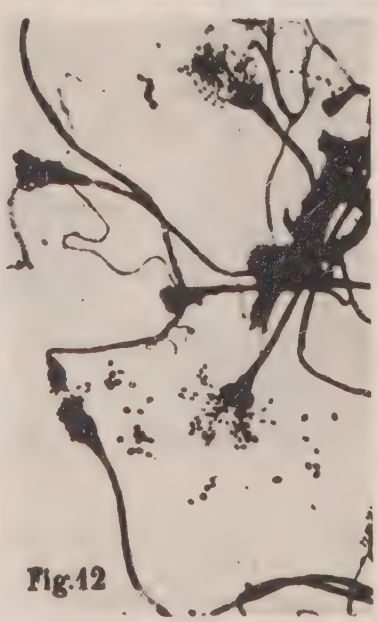

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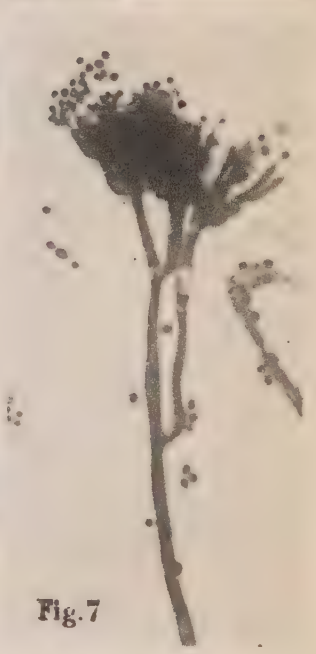
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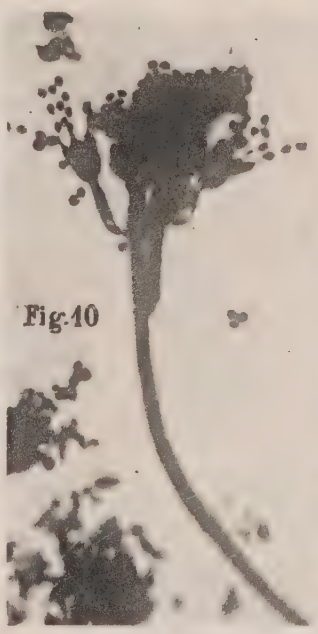
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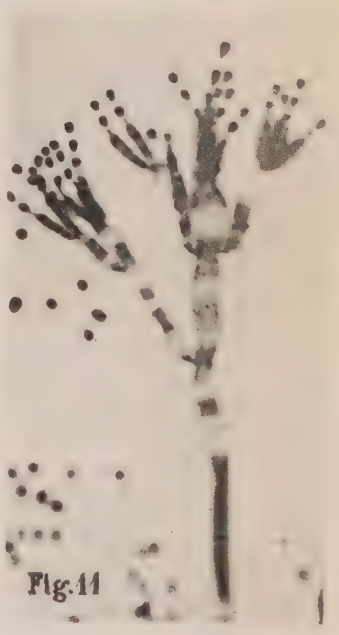
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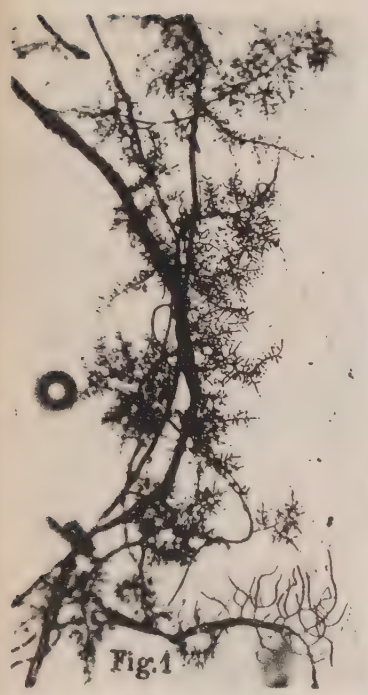

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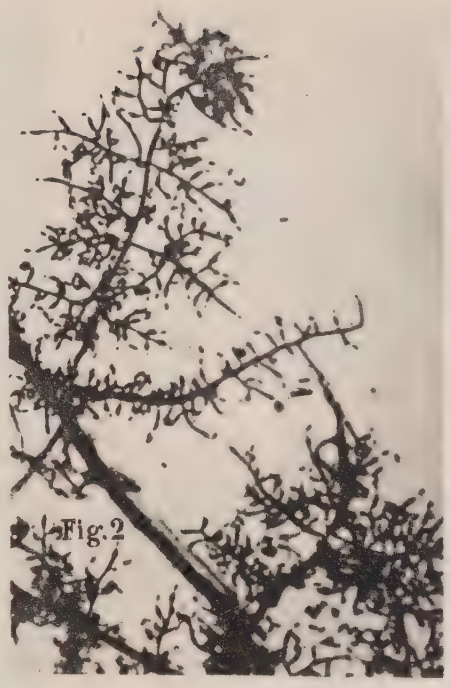

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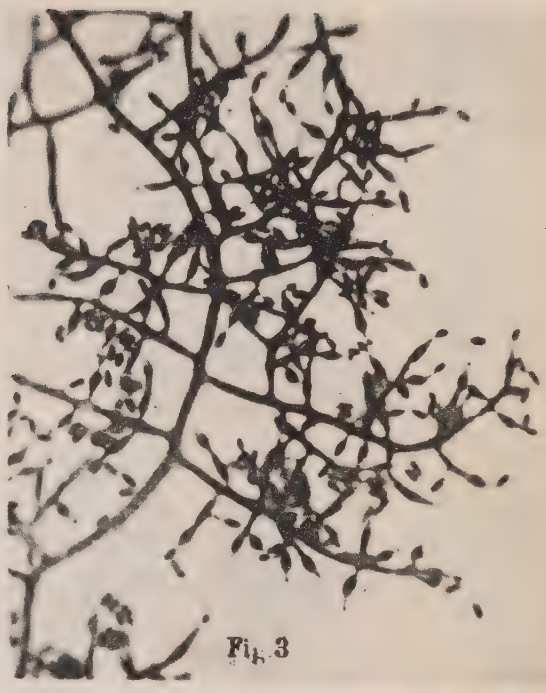

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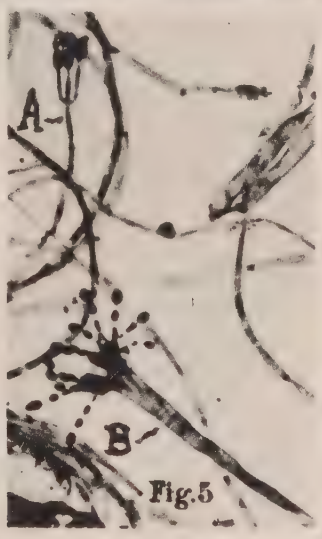

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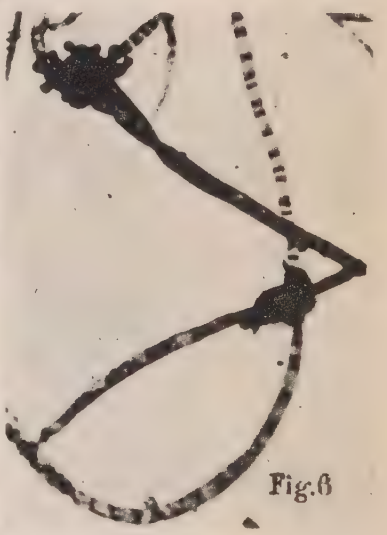

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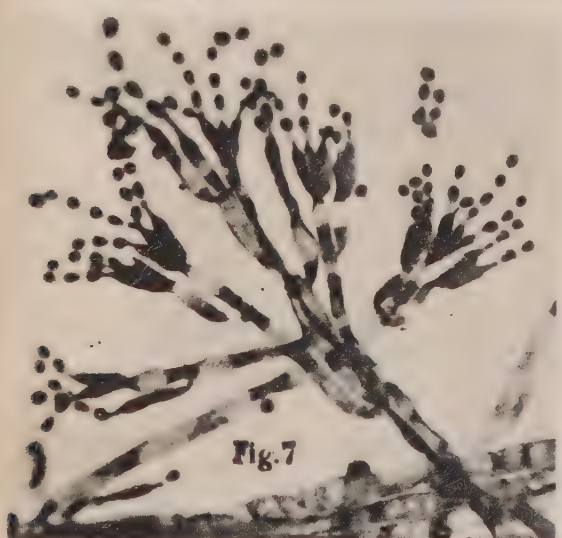

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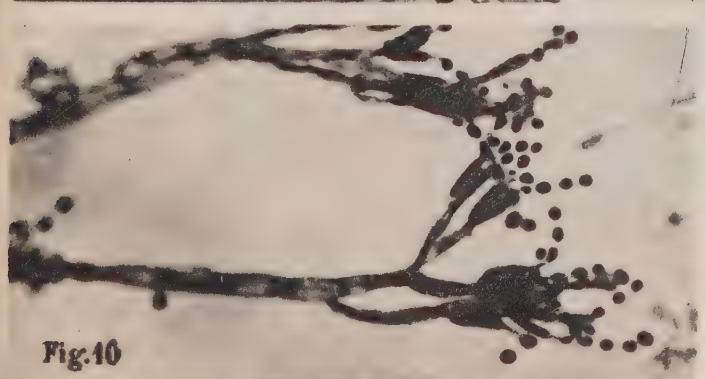

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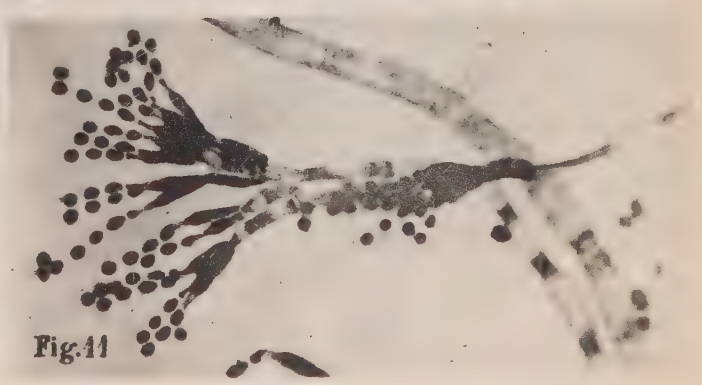

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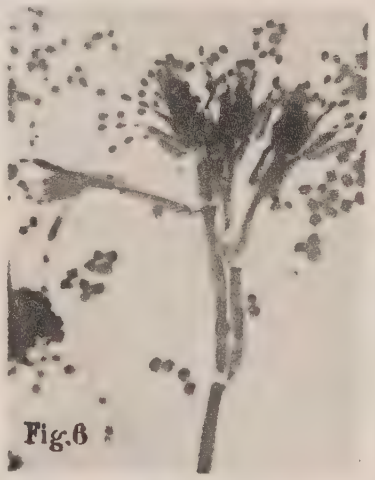
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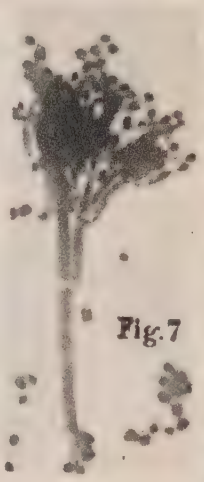
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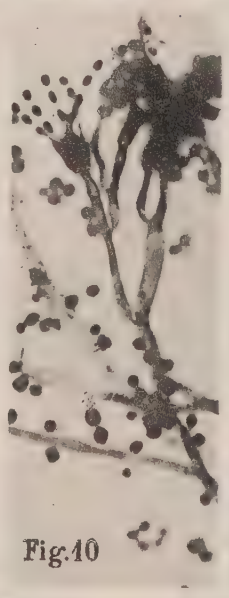
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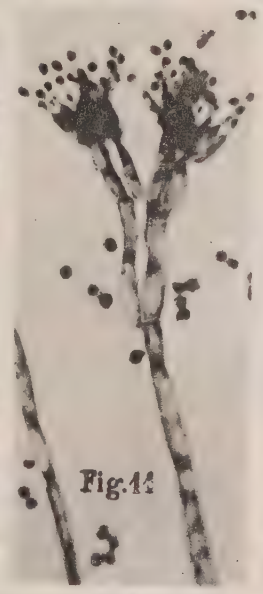
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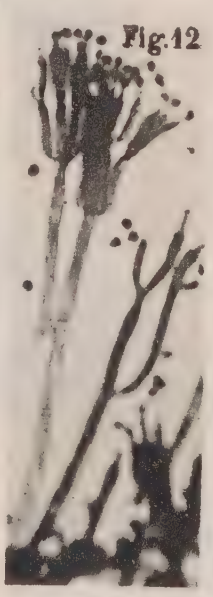
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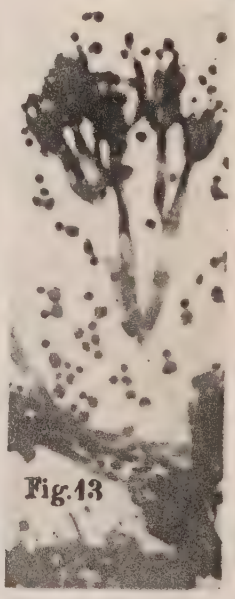
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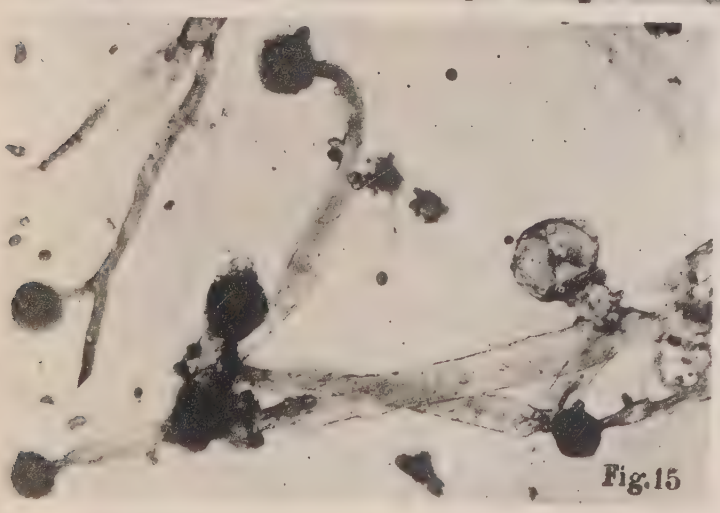
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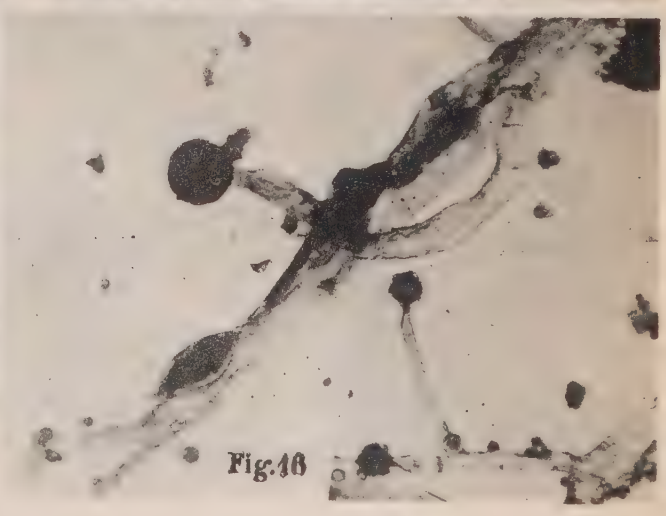
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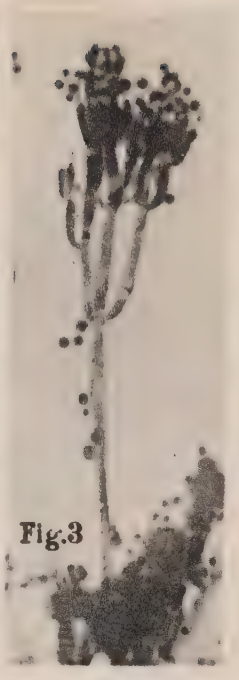

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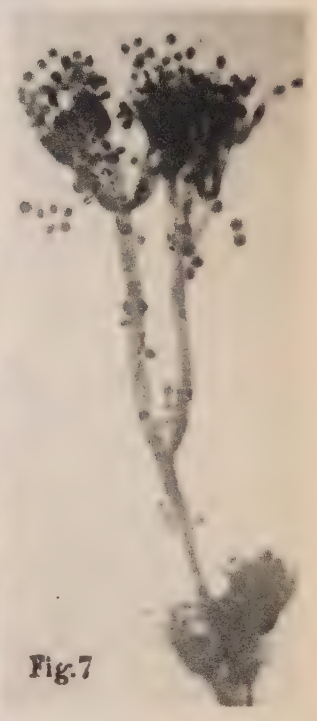

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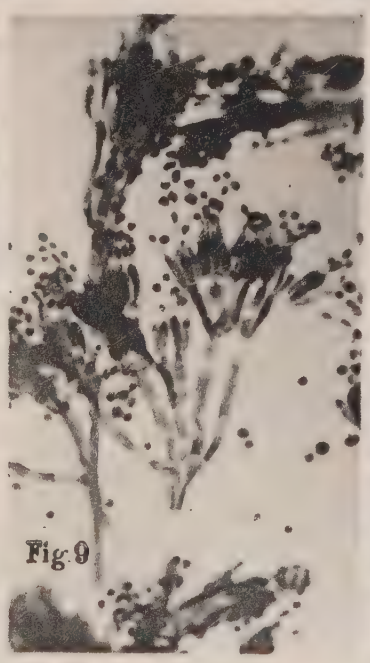

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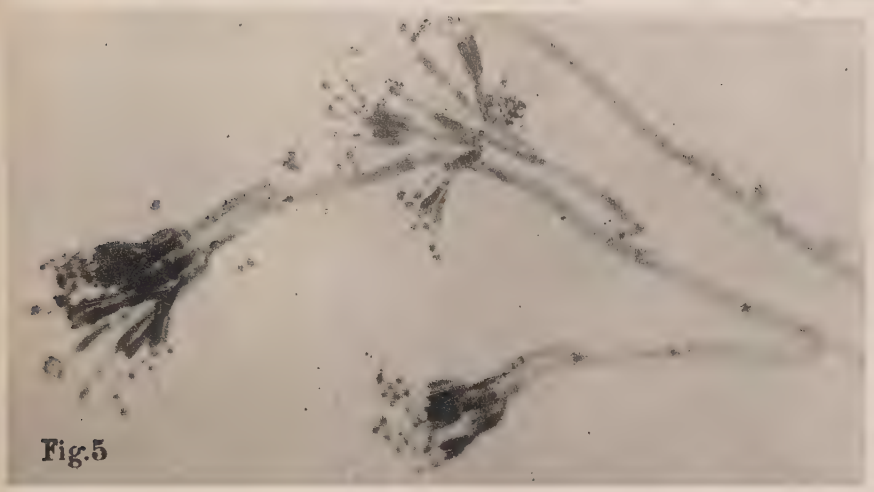

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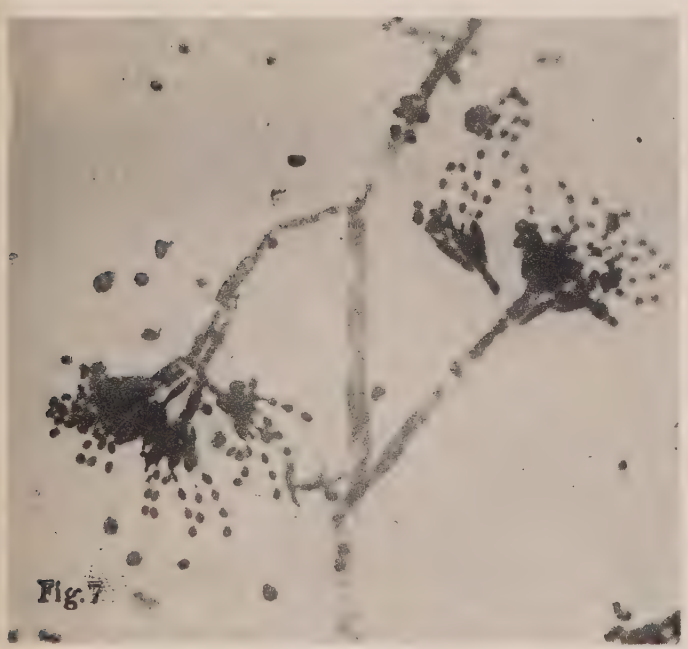

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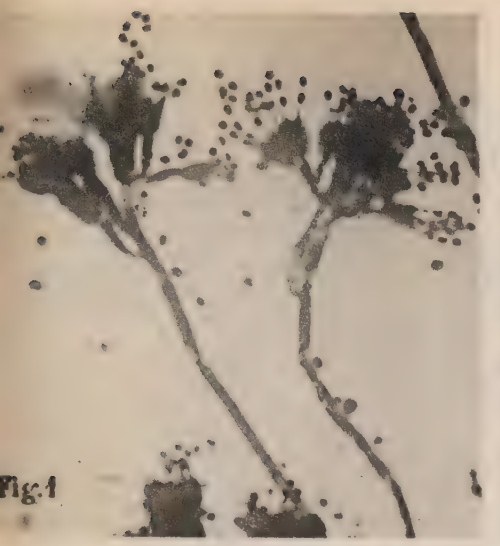

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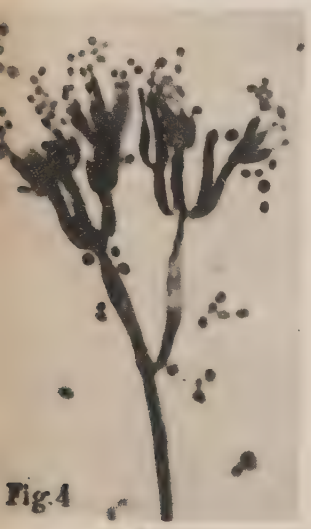

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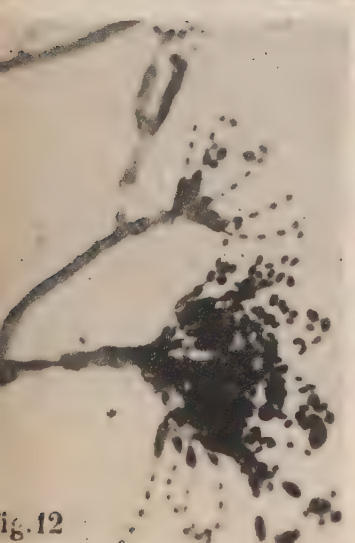

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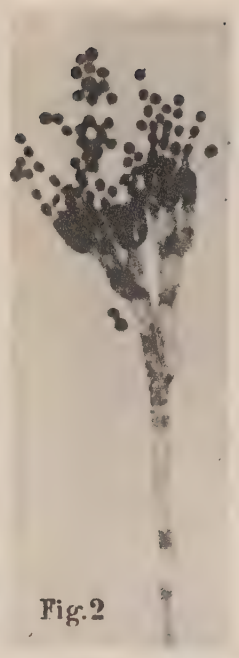

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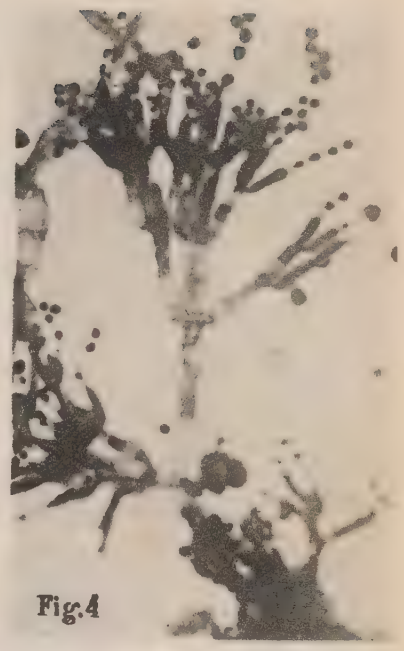

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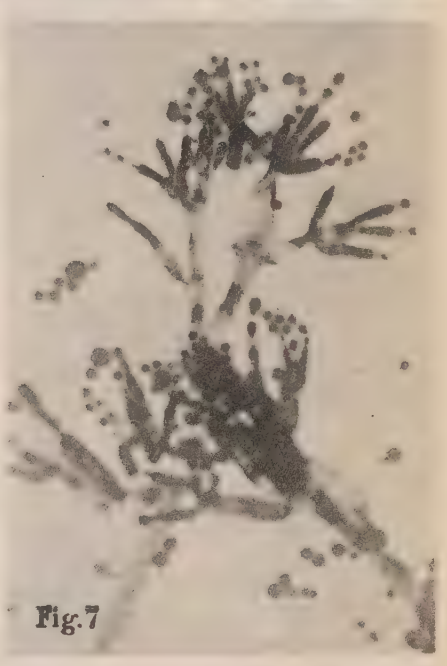

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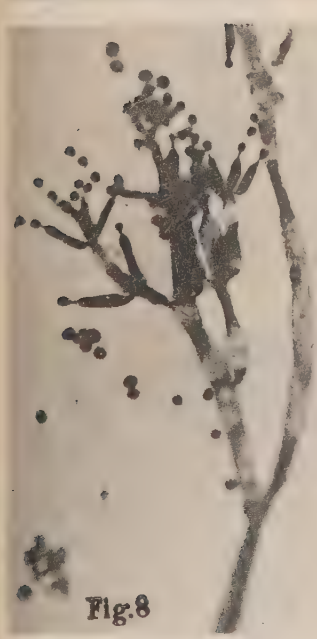

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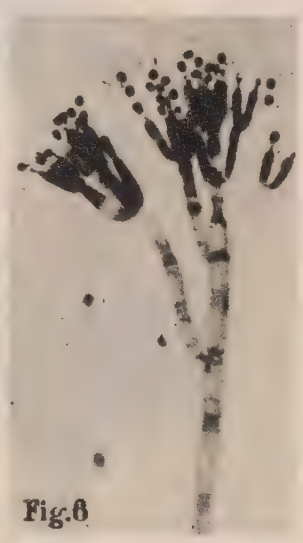
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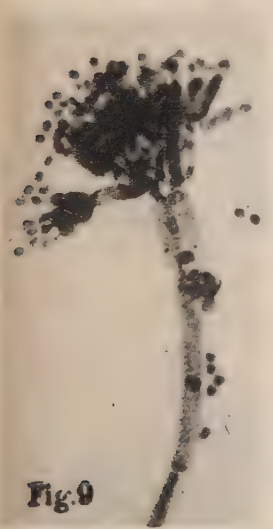
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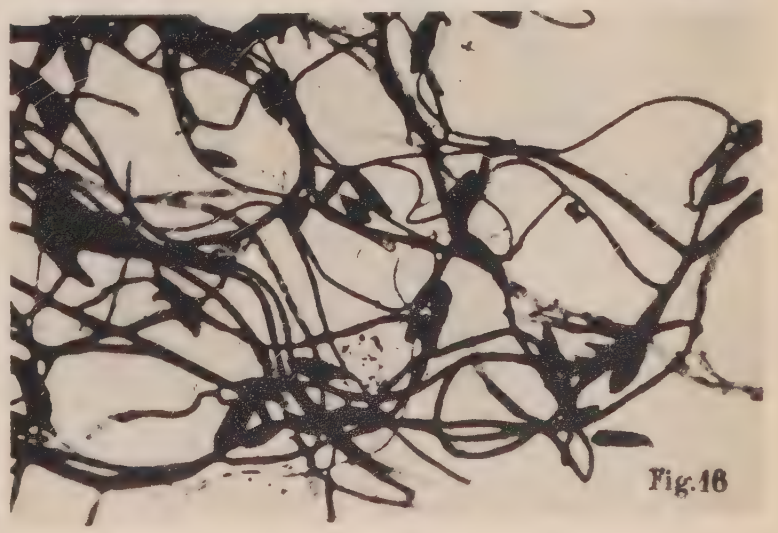
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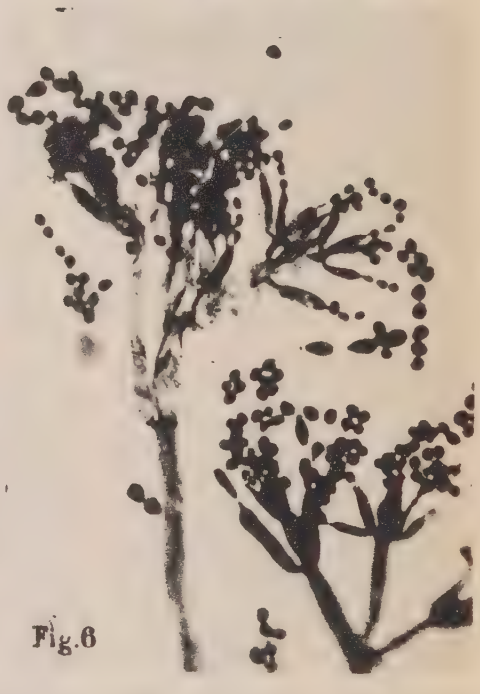

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